

**MUSIC AND DISABILITY:
HISTORY, SOCIOLOGY, EDUCATION**

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Abstract

Performers with disabilities are largely ignored in discussions about accessibility within music, particularly in historical texts, performing venues, and music education. I argue that music education is the key for a better inclusion of future generations of disabled musicians in the professional music world. By developing more inclusive music education programs, visibility will increase, and current disabled musicians will embrace their position as role models. This dissertation explores the concepts of disability, access and accessibility in music. I consider historical and sociological contexts of disabled musicians during different musical periods, offering a critical study of the integration of these musicians in historic and contemporary societies. Recognizing the need for more accessible curricula and educational practices, I propose a design framework for inclusive music workshops. Critical Disability Studies (CDS) models and related literature are used to analyze my findings.

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Preface

This dissertation finds its roots in my personal history, as a person with disability, a wheelchair user, singer, historian, teacher. As a singer, I have often considered quitting because of the inaccessibility of concert venues and practice rooms, taking for granted that there was nothing else to do but to go elsewhere or to quit. But as a passionate jazz and classical performer, I adapted. As a musicologist, I have found ways to access archives that are usually located in historical buildings with poor accessibility, but my stubbornness only strengthened my resolve to pursue these historical sources housed in inaccessible archives. I have been a Ludwig van Beethoven specialist since my teenage years, and today I am the editor in chief of the French Beethoven Society journal (*Beethoven*, Journal de l'Association Beethoven France et Francophonie). Beethoven was the first musician with a disability that I studied, although, at the time, I did not realize why I found his life fascinating. Transmission has always interested me, whether through teaching, or storytelling. For me, digging deep into the life of a person can also inform historical, sociological, and political contexts. Living with a disability has sometimes challenged me to complete my goals, and has disrupted important aspects of my life. In the last years, I have studied at York University in Toronto, Canada, which offers both Music and Critical Disability Studies (CDS) programs. Both my Master and my PhD allowed me to regard disability and music as interdisciplinary. This dissertation is the result of these years of combining these two fields and applying them to my areas of interest.

Introduction

Performers with disabilities are largely ignored in broader discussions of accessibility within music. For years, they have been removed from historical texts and denied access to mainstream media and music schools. This dissertation offers an investigation of practices of historical and current disabled musicians and their integration in their societies, using Critical Disability Studies models to analyze what is preventing disabled musicians from experiencing the same rights and the same access as non-disabled artists. Based on conversations with disabled musicians I interviewed on their career and their music education, I evaluate examples of tools and techniques in music programs open to disabled music students and propose my own framework to design an accessible music program.

My thesis argues that music education is the key to a better inclusion of musicians with disabilities in society. The conception of efficient accessible music curriculums and the use of adapted and adaptive music instruments can help students have access to inclusive music practices, teachers to improve the overall accessibility of their classrooms, and professional musicians to become more visible as role models to younger generations. Visibility leads to accessibility. Schools that support the improvement of accessibility of their buildings and their programs can serve as examples to venues which need to become accessible to welcome disabled musicians on stage. Historical disabled musicians who have been forgotten or removed from music manuals need to be recognized. In this dissertation, I propose an inclusive and adaptive method to help music educators in their exploration of options for a better integration of students with disabilities in their classrooms.

In order to understand the evolution of the integration of musicians with disabilities in society, a study of the historical and current contexts of disability in music is necessary. The methodology used for the research opens this dissertation. The findings in the archival research led me to the creation of a database with names of historical musicians with disabilities in different musical periods. The content of the conversations I had with current musicians I interviewed allow me to compare the past and the present of musicians with several disabilities, their music education, their instruments, their career, the difficulties they faced with access and accessibilities of venues, and the choices they made to progress. Findings from the historical and current narratives led me to create a case study of an accessible music education program addressing the issues faced by the musicians I studied. The method I used to create the framework and the workshops resulting from my research is given in the methodology section.

Chapter 1 defines disability seen from the field of Critical Disability Studies (CDS). I first clarify the term disability as seen by the field and define how CDS uses models of disabilities to analyze the integration and inclusion of disabled people in society. I examine the different models proposed by CDS scholars applied to music, especially the medical, social, human rights, and minority models. I then propose a literature review of the intersectional fields of music and CDS.

Chapter 2 considers sociological and historical contexts of disability, access, and accessibility in music. It delves into the lives and careers of historical and current musicians with disabilities. With biographical examples from archival research and interviews, this section shows how disability impacted their integration in their society, their education, access to adapted instruments and venues, and their relationship with

their audiences. This chapter is accompanied by two charts, one giving the list of the 18 interviewed musicians, and another the list of the 74 historical musicians studied in archives. Relevant biographical examples and quotations are used in this dissertation.

Chapter 3 looks at current adapted and inclusive music programs, how they are called, how they were designed, the difficulties the schools face funding them, the issues the teachers face implementing them, and solutions available to educators today. I analyze the frameworks and models used to design these programs. I dedicate a section to Universal Design for Learning (UDL) and how it benefits music programs built for students with disabilities.

Chapter 4 gives details on the framework I have designed and tested with a series of music workshops given in a music school. This framework offers students and teachers the opportunity to give feedback. I first give details on the methods and frameworks which inspired my own framework, and the choices I made to design it. Then I present the workshops I have created, with the expected results, the content, the timeline, and the final outputs. Details on my evaluations are given, along with the Lessons Learned document created with music educators after the workshops. Finally, I expose a project which is born from the combination of my research and the experience of leading the workshops.

Methodology

The methodology I used for the research described in this dissertation is a blend of historical analysis, interviews of professional musicians with disabilities from around the world, and the application of my findings in a case study. It consists of three phases.

Phase 1 is the creation of a database containing names, periods, styles, and other details about professional musicians with disabilities, alive and deceased, with nearly 200 entries covering periods from the fourteenth century to today.

Phase 2 examines cases of contemporary musicians through a series of interviews discussing different topics with participants, such as their music education, the evolution of their careers and their experiences as professional musicians.

Phase 3 is the application of my findings of the two previous phases in a case study led in a music school, for which I created a pedagogical method and a series of workshops with participants (students and teachers) exploring ways of performing music differently and discussing accessibility and disability in the arts. This method was strongly inspired by the interviews I led, with a particular focus on what musicians said they were lacking during their own music education.

Historical musicology

Primary and secondary sources were collected during a phase of extensive historical and archival research to look for Western Art musicians and composers with disabilities from Medieval to Contemporary music periods. The first stage consisted of the localization and referencing of musicians with disabilities through existing literature mentioning disabled musicians from all musical periods: books, articles, blogs, compositions, interviews, press reviews, and other written sources. This collection led to

the creation of a database, containing the following information: citizenship, gender, disability, year/date of birth, year/date of death, instruments, professional activities, and when existing, short biography. It was not rare that I wrote the short biography myself when elements were sparse or missing; I provided key information with the aim to complete this database at a later time. In 2024, at the beginning of the writing of this dissertation, the database contained nearly 200 names of living and deceased individuals.

The objective of the second stage was to find documented sources about historical disabled musicians or representation of music in artists in archives and libraries. I followed a Western Art Music chronology to organize my findings, although some musicians do not necessarily fit this categorization, such as Irish harpists who lived during Renaissance and Baroque eras but had little to do with the musical trends associated with these eras in Western Art Music. However, since most of the documented musicians correspond to these periods, musically and historically, I kept this classification.

The third stage consisted of planning in person visits to archives in Europe, where the first musicians with disabilities I found were located. Today, most of the archives have an online catalog with details. I worked on these catalogs before visiting archives and planned trips to Europe during summer. Between 2021 and 2024, I visited archives in Austria, Belgium, England, France, Germany, Hungary and Switzerland. I wrote biographical entries for 74 historical musicians with disabilities in the database.¹ The data presents both qualitative and quantitative information about disability type, gender, countries of origin and residence, instruments performed, and biographical elements. The

¹ A complete chart with the full list of names and complementary information about Citizenship, Country of residence, Phase focus and Place of interview can be found in Appendix Table 3.

examples I have included in this dissertation represent cases of disability-led performers who changed musical practices to accommodate their access needs or invented accessible patterns or content, either for their performance practices or for music theory.

Interviews

Based on my findings from the historical data collected, I noticed that there is little research about disabled musicians of the twentieth and twenty-first centuries, inside and outside the academic world. For this reason, I performed qualitative research about disabled musicians today by interviewing 18 of them between 2020 and 2023. The participants were musicians with a variety of disabilities and musical styles. Some of these artists had been recommended to me by other interviewees, some are well-known by disability studies scholars for being active advocates in the arts, some were musicians I already worked with. My decision to include them was driven by their interest in talking about their journeys as disabled musicians. The challenges they faced when progressing in their career reflect issues in considerations of their needs in terms of accessibility, perceptions of the artist by the audience, perception of the audience by the artist, presence in the professional music community, teamwork, help from new technologies, and disability activism in music. In addition to basic questions (such as: In what context did you grow up? What music education did you receive? How do you see yourself as a professional today versus yesterday? What changed?), I let each musician talk about their own lived experiences. Topics discussed arose naturally from their answers.

Table 1 - Interviewees by Phase - Basic information

Name	Country	Occupation	Interview phase	Interview date
Michael (Last name withheld by request)	Canada	Pianist	Phase 1	October 20, 2020
George Dennehy	United States	Singer and guitarist	Phase 1	October 22, 2020
Lachi	United States	Singer	Phase 1	October 23, 2020
Marko Vuoriheimo	Finland	Hip-hopper	Phase 1	October 28, 2020
Evelyn Glennie	United Kingdom	Percussionist	Phase 1	October 29, 2020
Blaine Harrison	United Kingdom	Singer and guitarist	Phase 2	October 30, 2020
Kevin McMillan	Canada	Singer	Phase 2	November 6, 2020
Paul Whittaker	United Kingdom	Pianist	Phase 2	November 17, 2020
Kris Halpin	United Kingdom	MiMu gloves player	Phase 3	March 15, 2021
Clarence Adoo	United Kingdom	Headspace player	Phase 3	March 17, 2021
Molly Joyce	United States	Composer	Phase 4	January 27, 2021
Gaelynn Lea	United States	singer and violinist	Phase 4	February 1, 2021
Adrian Anantawan	Canada	Violinist	Phase 4	February 8, 2021
John Kelly	United Kingdom	Singer and guitarist	Phase 4	April 7, 2021
Amal Fikry	Egypt	Board member of the Al Nour Wal Amal Chamber Orchestra	Phase 4	June 17, 2021
Ryan Gooch Nelson	United States	Singer and guitarist	Phase 4	October 9, 2021
Felix Klieser	Germany	Hornist	Phase 4	March 3, 2022
Frédéric Zeitoun	France	Singer and guitarist	Phase 4	August 5, 2023

The musicians who agreed to be interviewed are listed in Table 1. All interviews were transcribed. Unless specified otherwise, all the quotations I use come from these interviews, with no alteration of the original quotes. Each interview was done formally through Zoom (video recorded), Skype (video recorded) or in person (audio recorded) and lasted approximately one hour. The questions were scripted, but I gave them the freedom to talk about what they felt was important to them. My list contained questions about:

- Identity: where they were born, what they wanted to disclose about their disability or their impairment.
- Music practices: when they started music, what adaptations they use, what new technologies they use.
- Music education: how they worked with their teachers, how they learned music.
- Music activities: groups they are part of, activism.
- Accessibility: challenges faced when trying to find accessible venues.
- Perception: how they feel the audience is perceiving them as professional musicians, and if they think their disability makes a difference in this perception.

I divided the interviews into four phases, using phase 1 to get accustomed to the interview process, during which I adapted my questions. Phase 1 included five musicians, on considerations about physical and sensorial impairments. Phase 2 included three musicians, on the topics of education and perception about disability. Two musicians in phase 3 talked about the use of new technologies in their musical practices. For phase 4, eight musicians were asked about adaptations, disability activism, tours and venues.

Case study

Based on lived experiences of disabled musicians presented in chapter 2 and existing frameworks presented in chapter 3, the case study I conducted in the classroom is a proposed program to improve accessibility and inclusion in music education. I designed a theoretical framework using Universal Design for Learning (UDL) and Transformative Learning Theory. After defining both concepts, I drafted ideas for a series of accessible music workshops which could be given in a music school. Then I detailed the process of delivering the workshops, from the preparation to the final report.

As a certified project manager, I used project management methodology, based on the Project Management Professional (PMP) guidelines offered by the Project Management Institute (PMI), to structure this series of workshops. Along with the primary description and budget, I created a predictive life cycle (feasibility, design, build, test, deploy, close). The four workshops in the program were treated as four projects, each following some categories.

Either in written documents and charts or in person, I defined: the stakeholders (participants), the team (teachers, administration members, workshop leaders, contributors and guests), the development approach and lifecycle (what each workshop should be, how many iterations, what tools and instruments should be brought, bought or borrowed, and when), the planning (administrative, preparation and organisation meetings, dates of the workshops, dates of the performances), the project work (writing the meeting minutes, preparing consent forms for participants, doing the actions decided in development and lifecycle, such as buying, borrowing, installing the instruments,

running checklists), the delivery (running the workshop, sending the final report), and the measurement (how many participants, signed consent forms, learning objectives).

The framework consists of a series of tools and techniques for music educators to help them lead accessible music projects, exchange with other educators and specialists, and contribute to professional development. It is based on the following topics: assumptions, access needs, inclusion, teacher-learner, new instruments, new techniques, new technologies. The workshops content, the delivered results, and the professional development sessions I led in this context are given in the ‘Case study’ chapter.

As an extension of the case study and the research described in this dissertation, I implemented a platform providing accessible educational material open and available to everybody. ArtsAby was publicly launched in February 2024. It contains free resources on its website and a free podcast offering numerous conversations with guest disabled artists. I give details about this project in the ‘Case study’ chapter.

Chapter 1. Critical Disability Studies Frameworks

The exploration of the relationship between the arts and disability is relatively recent in the field of Critical Disability Studies. It prompted scholars to scrutinize the way disability “disrupts” the arts. This can take place either through the integration of disability into a non-disabled artistic practice, such as performing an instrument in a non-traditional way, or as a form of disability-led practice, such as creating disability arts festivals. I have personally experienced both. I am a disabled person, and I studied music and theatre most of my life. Before my disability put a halt to my career path, I did not consider disability compatible with the arts. I have a progressive neurological disease. When my own disability started to grow, the preconceptions I and others around me had, and the bad advice I received, pushed me to retreat. I abandoned the artistic path and reoriented toward computer engineering. I reconsidered my life from a different angle, more “adapted to my disability.” The main issue was related to the lack of accessibility of the place where I was studying. In France, where I come from, the buildings are old and rarely accessible to people with reduced mobility. Laws and policies have since been established to try to improve the accessibility of public places, but in the early 2000s, when I attended university, this was not yet the case. Disabled people did not fit anywhere in education, and even less so in the arts: classrooms, auditoriums, theatres, museums, and concert halls were rarely accessible.

Twenty years later, I recognize that disability has an important role to play in the arts. My own experience as both a musician and a disabled person brought me to the realization that the place of disabled musicians today is not highlighted enough. The struggle of staying in the world of professional music despite a disability often comes with a constant fight with society. However, the desire to do justice to the medium

remains constant. The impact of disability in music creation, collaboration, and the invention of new tools and techniques are important subjects, often unknown by the audience and by the music community.

In this section, I explain the important terms and concepts defined by Critical Disability Studies (CDS) while giving examples of accessibility issues and disability representations I came across through my research and my discussions with artists and scholars.² Through existing literature, I will attempt to answer these questions: How do different theoretical understandings of disability defined by Critical Disability Studies impact the access and accessibility advocated for disabled musicians? How can the current disability laws help cultural spaces to welcome more musicians with disabilities on their stages?

Disability can be seen and recognized from multiple lenses and perspectives. There are many types of disabilities, associated with many communities, expressing themselves in diverse ways. According to the accessibility and inclusive design strategist Gareth Williams:

Disability can be placed within a number of different frames. These frames can be seen as methodological tools for helping us to understand what is there in the world. [These frames are also] political because they have the power to make us see disability in one way rather than another. (Williams, 2001, 127)

These different perspectives of disability are frequently shaped by the way disability is perceived by non-disabled people, and mostly based on assumptions about disability

² I am indebted to Dr. Madeline Burghardt who first introduced me to a variety of models in CDS. She is the co-founder of Mobilizing Critical Disability Studies for Change, “a gathering space for people interested in mutual knowledge and resource sharing to support the use of critical disability studies (CDS) perspectives in areas where those perspectives are often missing” (MCDSC, 2024). She currently teaches at University of Manitoba.

created by non-disabled people. Being aware of these models sheds a new light on the integration (or the lack of integration) of people with disabilities in current society. Some of these models are more prominent than others, some more comprehensible than others, some can be interpreted differently depending on the points of view of the person presenting them.

The history of disability models is not necessarily linear or progressive, but the exercise of debating the impact of these models on society is important. Literature about the diversity of disability representations is rich and sometimes complex. One example giving a comprehensive overview of the advantages and disadvantages of different models is the English sociologist and bioethicist Tom Shakespeare's book entitled "Disability: The Basics" (2018) which not only talks about disability models but also about the history of disability representation across different time periods and different communities. Considering disability in certain models is helpful to discuss different perspectives. These models are only models, not theories. They give room to discussion, whether we approve or disapprove them. Experts in CDS frequently discuss what new additional models could be listed. This section will present a non-exhaustive list of disability models that are relevant to my study of disability and music practices.

1.1. Clarifications, definitions and concepts

Before talking about Critical Disability Studies models, I would like to clarify some terminology found in this dissertation. The first topic is the language used to speak about individuals with disabilities. Two trends can be found in the disability community: person-first language prioritizes the individual by placing their humanity before a disability or condition ("a person with a disability"), and identity-first language places a

person's characteristic first, to show that the characteristic is an integral part of their identity and culture (“a disabled person”). The interdisciplinary gender studies specialist Margrit Shildrick suggests, in a deep exploration of disability terminology, that the preference in CDS today is to use “disabled people” rather than “people with disabilities”:

The term ‘people with disabilities’ was initially promoted to signal a break with older and more evidently stigmatising terms such as handicapped, retarded, crippled, and so on. Other supposedly more positive designations such as differently abled, physically challenged or special needs have fallen out of favour, and the use of so-called people-first language forms [such as ‘people with disabilities’] is now seen as failing to encompass the significance of disability, treating it as more as a contingent add-on than a fundamental element in the production of identities.³ (Shildrick 2012, 42-43)

I do not agree with Shildrick. The use of identity-first or person-first is a choice of the person. I identify as a disabled person. I am conscious of the different labels that could be associated with the term “disabled” and its many existing variants. My preference goes to “disabled people” as it aligns with the perspective that people are disabled by social and political barriers, as we will see later in this dissertation. However, I equally use “people with disabilities” and “disabled people” in my paper (and later “disabled musicians” and “musicians with disabilities”) when the terms better align with the context. These language considerations come from deep reflections by disability studies specialists, and the different models defined by CDS.

In this dissertation, I make use of the social model of disability. As opposed to the medical model, which analyzes disability from a strictly medical and functional point of view (i.e., spinal cord injury leading to the use of a wheelchair), the social model of

³ This quote can be found in Note 1 of the article.

disability states that people are disabled more by society and the obstacles it imposes than by bodily impairments. The social model also examines the entire person with their capacities, feelings, emotions, possibilities and social interactions with others. These two models have led to the distinction between the terms “impairment” (which refers to bodily condition) and “disability” (which refers to social obstacles). Mike Oliver and Colin Barnes, both pioneers in the field of Disability Studies, have written extensively on the subject. Barnes (2012) points out:

In order to understand the significance of the implications of social model reasoning, it is important to remember that until very recently ‘disability’ was viewed almost exclusively as an individual medical problem or a ‘personal tragedy’ in Western culture. (Barnes 2012, 14)

In complement, Oliver (2013) reminds us:

The idea behind the social model of disability stemmed from the Fundamental Principles of Disability document first published in the mid-1970s (UPIAS⁴ 1976), which argued that we were not disabled by our impairments but by the disabling barriers we faced in society. (Oliver 2013, 1024)

Their thorough insight of disability as defined by the social model led to a completely new vision on the rights of disabled people within our society.

Disability activism has given a voice to people who want to be heard and seen, manifesting their rights to politicians, and asking for a fair position in their communities. Activism has allowed disabled people to participate in the creation of new laws to make transportation and jobs more accessible to all kinds of people. However, Barnes points out that, at the time of the first constructions of the opposition between social and medical models, the social model was controversial. Its tendency to distinguish

⁴ UPIAS stands for Union of the Physically Impaired Against Segregation, an early disability rights organization in the United Kingdom founded in 1972.

impairment from disability led to a firm distinction between the terms “disability” and “impairment.” These terms seem outdated today, since impairment is based on the medical model (a problem with a person's body structure or function) and disability on the limitations created by impairments. Through the works of disabled activists and scholars, the social model today states that disability is caused by the way society is organised, not by an opposition between disability and impairment anymore.

In addition to the social model, which rose to prominence in the 1970s, a cultural model of disability appeared in the early 1980s. This model originated primarily in the United States and became commonly accepted as the dominant worldwide model in the early 2000s. In 2006, it heavily informed the United Nations Convention on the Rights of Persons with Disabilities (CRPD), cementing its influence in international human rights frameworks. Based on the idea that disabled people are an oppressed minority group with a particular culture, several movements were born from this concept, such as Deaf culture (with a Capital D), and Crip Culture, which celebrates diversity. The term “Crip” is an identifier, reclaimed from the archaic ‘crippled’, a derogatory term for disabled people that was used throughout the 19th and much of the 20th century. In the cultural model of disability, the word ‘Crip’ has been reclaimed to represent a broader range of people being different; it indicates pride in these differences and serves as a tool for disability activism and to talk about disability rights. Historically, it borrows from the concepts of the civil rights movements and gay rights movements.

In 1994, Steven Brown, a disability scholar, investigated the existence of a cultural model of disability and invited specialists and scholars to participate in a convention on the topic. Many speakers provided insight into the different aspects of the

cultural model of disability, from a historical point of view to its current meanings today, exploring definitions of disability culture. As an example, Carol Gill, a Psychology professor and a pioneer in disability studies, defines disability culture as follows:

A disability culture movement can foster disability pride. It promotes pride in us; it allows us to project a positive image to the public. We renew each other and our strength through shared experiences and rituals. If we express our culture in some unified way, we're signalling; we're communicating what our values, goals, and identity are. Through our culture we can recruit people. When we present a strong image, it motivates people to want to belong. They want to be part of something that powerful. (Gill, cited in Brown, 1994, 105)

The feeling of belonging was a priority from the beginning of disability rights movements, fighting for people to be included as individuals with identities and rights in society. Among the participants at the convention, several were already active in the disability rights movement in the US, including the long “504 Sit-in” in April 1977 (see Figure 1), protesting Section 504 of the Rehabilitation Act of 1973,⁵ an American legislation that guaranteed certain rights to people with disabilities. Another fight led to the amendment of the American Disability Act, or ADA, in 1992 to recognize the status of people with disabilities as a minority group. Speaking of these movements, Brown points out the importance of the work of the artists, especially musicians, to accompany these actions:

Music has played an extremely significant role in American popular culture for decades as well as in social movements for as long as they have existed. Music also reflects the oral tradition of storytelling and of passing from one generation to the next information that might otherwise be lost. Musicians with disabilities who soak their art with the effects of disability from their lives include Jeff Moyer,⁶ the troubadour of the 504 demonstrations, and Elaine Kolb,⁷ who penned “We Will

⁵ Section 504 prohibits discrimination against people with disabilities in programs and activities funded by federal agencies. This includes areas like public schools and public transportation. It was protested because it was barely respected.

⁶ Jeff Moyer is an American musician and disability rights activist.

⁷ Elaine Kolb is an American disability rights activist, singer, songwriter, and performer.

Ride:” the theme song of ADAPT⁸ during the heights of its protests against inaccessible transportation. (Brown, 1994, 148)



Figure 1 - 504 Sit-in

Photo: Anthony Tusler. Shared with permission

Today, disability activism is still strongly represented in the musical field. Disabled musicians such as Lachi and Gaelynn Lea, whose interviews will be discussed later in this dissertation, represent the recent generation fighting for disabled musicians to get a place on stage.

1.2. Medical and Social Models

The medical model of disability is one of the predominant models in CDS, especially since the mid-1800s. It locates disability in the body and considers the

⁸ ADAPT stands for American Disabled for Attendant Programs Today. It is a non-violent disability justice group.

impairment as a starting point. In this model, disability becomes an individual problem that should be “cured” or “improved.” The goal of the medical model is to “ameliorate” disability, or to make it disappear, through medical intervention, assuming that this is the desirable route to follow. This model directly opposes the idea of disability identity, since disability should be removed rather than be embraced.

When it cannot be removed or improved, tensions arise within the medical world, triggering the idea that disability is “bad” or “abnormal.” If modern medical advances have indeed improved lives of people who are better cared for, for whom medicine could bring solutions, there are also limits to what is considered ethical, or even sometimes legal. For instance, eugenics can be used as a definitive elimination of the problem by erasing individuals with disabilities; the decision to grant life or death can be made before birth, with parental screening. Assumptions of the ability of a person can be made by strangers when the person is not understood or when it is believed that a life is “useless”, for example for people living with Locked-in Syndrome. The idea of going through a heavy treatment to “get better” is a challenge: is a growth surgery worth it for a person of short stature? Or a cochlear implant for someone who has strong hearing impairment? Patients sometimes do not know if the result is guaranteed, and their life is considerably affected when going through medical experimentations. Moreover, it strengthens the idea that the individual body is the source of the problem as opposed to the society, and that a world without disabled would be “preferable.” Even today, the medical model remains the predominant approach to disability.

The social model of disability emerged from civil rights movements, especially the Disability Rights Activist movements in the United Kingdom in the 1970s and 1980s.

In 1972, the Union for Physically Impaired against Segregation (UPIAS) was founded by a group of activists (Paul Hunt, Vic Finkelstein, Mike Oliver, Colin Barnes, Geoff Mercer, and others who added their input) who challenged the definition of disability by separating impairment from disability. The booklet summarizing their ideas in 1976, *The Fundamental Principles of Disability*, defines

impairment as lacking part of or all of a limb, or having a defective limb, organ or mechanism of the body; and disability as the disadvantage or restriction of activity caused by a contemporary social organisation which takes no or little account of people who have physical impairments and thus excludes them from participation in the mainstream of social activities. Physical disability is therefore a particular form of social oppression. (UPIAS, 1976, 14)

In addition to disability seen in the social realm, Vic Finkelstein also considers the notion of disability in materialism and the emergence of capitalism: people who cannot manipulate machines because of their impairment are forced to stay at home, creating competition between productive and non-productive people. It can relate to Materialist Theory, in which the relationship to tools and objects used in our world influences our productive skills and the way we consume goods and products. This theory rules the value of individuals in society depending on the level of productivity (Finkelstein, 1981).

One of the problems with the social model is that it tends to maintain a distinction between the body as conceived in the medical and the social models. Bill Hughes and Kevin Paterson, both professors at the Department of Social Sciences of Glasgow Caledonian University, disagree with this differentiation. They talk about a “lost corporeal space.” They claim that:

The social model – in spite of its critique of the medical model – actually concedes the body to medicine and understands impairment in terms of medical discourse. To recapture this lost corporeal space without returning to the reactionary view that physicality determines social status, the social model

requires to mount a critique of its own dualistic heritage and establish, as an epistemological necessity, that the impaired body is part of the domain of history, culture and meaning, and not – as medicine would have it – an ahistorical, pre-social, purely natural object (Hughes & Paterson, 1997, 326)

They point out that, consequently, the body has disappeared from disability discourse, rendered synonymous with its impairment or physical dysfunction. In short, there is little room for medicine in the social model. They find it barely comprehensible that the separation between body (impairment) and social (disability) came at the same moment when the sociology of the body became fashionable in the history of sociology. One of the effects is the denial of medical improvements on the lives of people with disabilities, leading to more inclusion in society, such as successful surgeries helping people to regain mobility or senses, but also the integration of new technologies in medicine or prosthetics allowing disabled people to live a better life. Instead of separating medical and social, maybe social model theorists should think of the convergence between biomedicine and the social model of disability with respect to the body. This article was written over 25 years ago. Although our current social model practices recognize the value of both social and medical improvements, the disability community remains attached to the separation between the notions of disability and impairment.

Another perceived problem in the social model is whether or not it is intersectional or diverse. Since it is about society, it should include a diversity of communities impacted by societal changes, including, but not limited to, gender and race. The social model was first discussed by a group of well-educated white European men. The Australian expert in disability and feminism Jenny Morris challenged the accuracy of the social model in the context of women. After interviewing disabled women in the

1980s, she published a book about her experience and those of women in a similar situation called *Able lives: women's experience of paralysis*, in which she asserts:

As women, part of our return to 'normal' life is often a return to the pressures of looking after other people. Aids and adaptations which are supposedly about helping us to be [physically] independent are in fact often about enabling others to be dependent on us for the tasks which keep a house clean and a family fed.
(Morris, 1989, 52)

She came to the conclusion that the concept of independent living put forward by the social model of disability cannot be fully developed unless disabled women's experiences were put at the centre of the debate. Things have changed today, since many women are now part of the conversation about disability in society, but feminist theories can still enrich the current models of disabilities. Women's Studies has the potential to make Disability Studies evolve because of the multiple intersectional connections between women's lives and body of knowledge in society, and people with disabilities.

The sociologist and bioethicist Tom Shakespeare also highlights several issues with the social model. One of them draws a parallel between people of colour experiencing racism, regardless of ethnic origins, and people with disabilities experiencing oppression, regardless of impairment. He reminds that Mike Oliver, one of the first professors of Disability Studies in the world, argues that “the social model is incompatible with taking an impairment specific approach to disabled people” (Oliver, 2004, 30), and consequently there can be no specific analysis of responses to racism or oppression (Shakespeare, 2006, 31).

Whether we should consider diversity or multicultural aspects of disability by including race and gender in the context of disability is a question frequently asked by scholars in the CDS field. The Disability Arts and Disability Justice specialist Simi

Linton points out that the debate sometimes leads to the opposite effect: disability is ignored from critical race studies and feminist studies:

People are also concerned that the diversity agenda is too inclusive and will lose its potency if the category is too elastic. These are legitimate questions, but I have not seen much active engagement with these issues. Specifically, people who either ignore the issue of disability altogether or overtly reject it as an analytic category have not, to my knowledge, actually engaged with the scholarship in their writing nor have disability studies scholars been invited to participate in plenary sessions at conferences where an open dialogue could take place. Occasionally the terms ability or disability are recited in a list of issues, but they are never discussed. (Linton, 1998, 90)

These intersectionalities have pushed disabled people who refuse to be invisible to fight for their rights, which is a point of view strongly associated with the social model of disability. Moreover, what used to be a fight for physical access extends today to digital spaces, especially post-COVID19 pandemic. Before lock-down periods, people with disabilities who were forced to stay at home could not participate in daily activities that require physical presences. When all these activities, including work, education, arts, social meetings, etc., switched online, everybody was forced to use new technologies through their computers, phones and tablets, from the safety of their homes, to interact. Most of the population of the world spent hours behind the screen, and people who were previously forced to stay at home were not “disabled” anymore, their participation was “enabled” online. When the pandemic was declared over (although this entails another level of debate that is out of the scope of this dissertation), many activities returned to the former in-person frame, but some remained online. The difference is that today we know what is possible. In the research world, many conferences, even those hosting subjects related to disability, do not propose online options anymore. Many scholars advocate for the return of online options, but they are sometimes ignored.

The discussions about definitions of disability also redefine what it means to identify as a disabled person. With more visibility and integration into society, disability as an identity becomes a subject of concern. The term ‘disability’ itself comes with negative connotations, but people with disabilities want to show that a disability identity can also be positive and seen as an integral part of a community:

Disability identity entails a positive sense of self, feelings of connection to, or solidarity with, the disability community. A coherent disability identity is believed to help individuals adapt to disability, including navigating related social stresses and daily hassles. Attention to disability narratives will enable rehabilitation psychologists to develop detailed theories and plan empirical investigations aimed at exploring the psychosocial applications of disability identity. (Dunn & Burcaw, 2013, 149)

With the notion of identity, the feeling of being recognized as a person is strongly present in discussions about disability. In later sections, we will see how this notion is actively driving conversations about different aspects of one’s identities, as a family member, as a parent, as a musician, etc.

1.3. Human Rights Model

Inclusion is one of the principles of human rights. In CDS, the human rights model has been historically informed by and overlaps with other Civil Rights movements. Their common goal is the fight for human rights, seen as the foundation of the understanding of the rights of people with disabilities. The Canadian disability rights specialists Marcia H. Rioux and Fraser Valentine have asked themselves if the human rights theory matters, especially in the context of the group of people with disabilities they have studied in Canada (“people with impairments or disabilities in economic and social life,” Rioux & Valentine, 2006, 52). For their investigation, they took a critical

disability theory approach, which analyzes disability as a political, social, and historical phenomenon, challenging ableism and power structures that oppress disabled people:

A critical disability theory approach offers an important lens in unravelling the inherent complexities associated with disablement and equality. It begins with the assumption that theories of human rights and equality provide the necessary foundation for understanding the linkages between the existing legal, economic, political, and social rationales for the full inclusion of people with disabilities, and the systemic barriers and oppression that continue to construct people with disabilities as inherently unequal and disentitled to citizenship rights. Critical disability theory offers a politicized view of the meaning and experience of disablement in contemporary Canadian society. (Rioux & Valentine, 2006, 47-48)

The Human Rights Model uses texts of laws and its data to analyze the evolution of people with disabilities in the context of human rights. For example, the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), adopted on December 13, 2006, at the United Nations and signed by 164 signatories at the time of this paper, offers monitoring tools with frequently published and updated results on their website (United Nations, 2025). This information gives the evolution of the application of the disability related laws to ensure people's access to services and support to which they are entitled. However, since it is a strictly analytical approach, it does not challenge the notions of "citizenship" or "inclusion" which are considered as number factors and statistics and used as "instruments of human rights." Each country has its own definition of human rights, disability, citizenship or identity, difficult to convert into statistical numbers used to evaluate the successes or failures of this model in the reports. It does not acknowledge the different applications of human rights at international level: each signatory country applies these rights in their own national way, which sometimes conflict the UN use.

The Human Rights Model does not recognize the variety of interpretations of human rights around the world. Other related subjects are similarly tendentious, such as isolation or poverty in relation to disability. Rights alone do not eliminate disability, isolation or poverty. Moreover, the question of recognition of the concept of disability itself is contestable for some nations. Global South researchers Helen Meekosha and Karen Soldatic have analyzed the use of this model in the context of the UNCRPD:

One of the critical mobilisation strategies has been to ensure that disability is explicitly named, and hence recognised, as a real and lived category of human experience. However, we are caught in a complex and contradictory position here. Indigenous people and residents in the global South contest disability as a concept. Many do not recognise that they have a disability given overwhelming issues of bad health, cultural deprivation, loss of land, inadequate housing and poverty. We need to be aware that even those concepts that we use as part of the political project and in a symbolic manner are fluid and subject to change and contestation. (Meekosha & Soldatic, 2011, 1385)

Although I did not face any contention about the meaning of disability with the people I interviewed or worked with, I recognize that I use Western notions of disability in my work and in this dissertation. This understanding might be challenged by some people, for example Indigenous people, who might comprehend it as a colonial construct that conflicts with their traditional cultural beliefs.

I recently attended a conference in Toronto organized by The Disability Collective, a fully disability-led multidisciplinary arts organization dedicated to celebrating and showcasing work created solely by disabled artists. The conference, called DIScover,⁹ brought together Deaf and disabled artists and arts collaborators from all over Canada, among which Deaf artist and activist Marsha Ireland from Oneida

⁹ DIScover was organized by The Disability Collective and took place at Native Earth's Aki Studio on October 9 and 10, 2025.

Nation and Turtle Clan. In her session, titled “Our Hands, Our Medicine: Revitalizing Oneida Sign Language,” she told the audience about her journey of healing through the power of Oneida Sign Language (OSL), a specific sign language integrating storytelling and heritage. American Sign Language (ASL) is not her first language. OSL and fingerspelling are tools that many people in her community use, not only Deaf people. Marsha is an elder and rejects the notion of disability as defined by Western settlers: what we call “disability,” and everything associated with it, including mobility aid devices (wheelchairs, walkers, canes, etc.), is for her a gift that has been granted for a specific reason. Deafness is not a disability. She cannot hear but she can be loud. She cannot speak like a hearing person, but she can communicate. She does not like written communication, she prefers signs. With signs, everybody can understand and be understood. Signs, to her, represent transmission.

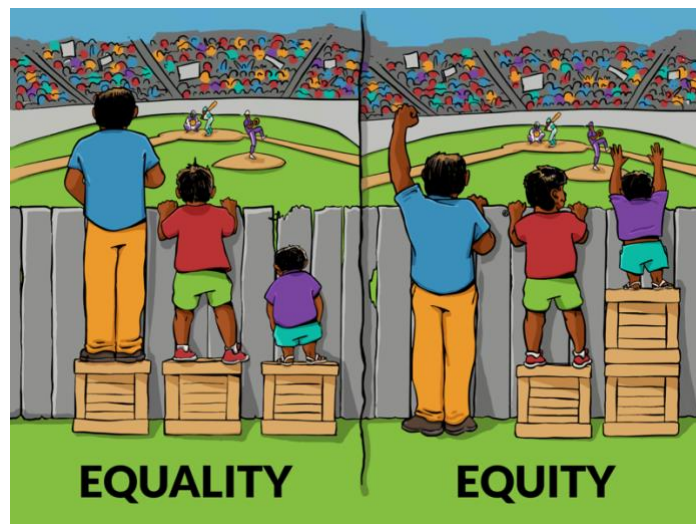


Figure 2 - Equality vs. Equity

*Source: Interaction Institute for Social Change
Artist: Angus Maguire - 2016. Public domain.*

Studying disability from a human rights perspective entails understanding the difference between equity and equality. Equality means treating everyone the same, regardless of differences or specific needs, while equity acknowledges difference and provides specific resources to each person to succeed. In equality, the income is the same: everybody gets the same tools or rights, but the result (the outcome) might be unequal. In equity, the outcome is the same: tools or rights are distributed according to the different circumstances and needs, in order for people to be successful.

A popular and largely circulated image shows three persons trying to look at a sports game over a fence, from both equality and equity perspectives (see Figure 2). The three characters have different heights: the first is very tall, the second has a medium height, and the third is shorter than the two others. The image on the left, representing equality, shows the three persons standing on wooden boxes of equal size. As a result, the first character can see clearly over the fence, the second one can also see since his head is over the fence, but the third character cannot experience the game, the height of the box being insufficient for him to see what is happening on the field. The image on the right, representing equity, shows the same three characters, but this time the tallest character does not stand on a box anymore; instead, the third character stands on two boxes. As an output, this new arrangement allows everyone to enjoy the game the same way. The problem with the Human Rights Model is that it privileges equality and not equity, because of the way that the Human Rights Model has been historically implemented. It might have been different if this model was implemented focusing on the outcomes, rather than the tools.

This issue is discussed by the Haas Institute for a Fair and Inclusive Society at UC Berkley, which edited a guide explaining in detail the pros and cons of Universal versus Targeted strategies in the Human Rights Model (Powell et al., 2019). A universal approach looks at policies applied to an all-encompassing group of people. A targeted approach looks at specific populations only, disregarding all external elements. Universal strategies provide benefits, services, or protections to all people within a given population, regardless of their characteristics. These strategies are designed to avoid stigma since they are available to everyone, thus preventing the stigmatization of specific populations. They also address root causes: since it applies to all citizens, the universal approach can more effectively tackle systemic issues that affect everyone, rather than only treating the symptoms for specific groups. Administratively, these strategies might be easier to implement by avoiding complex and costly processes for means-testing or screening individuals to determine eligibility. Finally, this approach builds a sense of social solidarity, based on inclusive benefits which can foster a sense of collective belonging and reciprocity among different groups in society.

Conversely, universal strategies can be inefficient because they allocate resources to many people who are not at the highest risk, potentially diluting the effect for those who need it most. They can also be seen as insufficient for deep inequities: while universal approaches can increase equity overall, they may not sufficiently address the deep-seated disadvantages faced by the most marginalized groups.

Targeted strategies focus on providing benefits, services, or protections specifically to a subgroup of the population based on particular criteria, such as income, ethnicity, health, or disability status. They efficiently use resources by directing them

specifically to those in need, for instance with targeted programs which can be more cost-effective and have a higher impact on the most disadvantaged. The inequalities this approach addresses are specific: it allows for a direct focus on specific populations experiencing disproportionate disadvantages, which can more effectively reduce health and social inequities. These strategies can be implemented early, since targeted programs can be designed to address problems early in at-risk populations, potentially preventing issues from escalating. Finally, for those served, a targeted, rights-based approach can empower individuals to claim their entitlements and participate in the development of policies that affect them.

Targeted strategies present a risk of stigmatization: targeting specific groups, especially through means-testing, can lead to labeling, stigmatization, and feelings of disrespect or division. Identifying those who are truly in need can be complex and imprecise, leading to potential inaccuracies that exclude deserving individuals or fail to reach the most vulnerable. Moreover, policies that are perceived as helping one group over another can fuel hostility and resentment, eroding political support for the program. Administratively, the costs and complexity of means-testing and screening can also be significant.

Blended approaches exist, recognizing the limitations of both universal and targeted strategies. Many human rights models now employ a combination, called targeted universalism and proportionate universalism. Targeted universalism sets a universal goal for all but uses targeted strategies to achieve that goal, especially for disadvantaged groups. Proportionate universalism provides universal services but scales

the level of intensity proportionally to the level of need. It focuses on the slope of the health or equity gradient, not just the gap.

In my research, equity and equality are frequently discussed, particularly in relation to accessibility of venues for performers with disabilities. An equality-based approach provides the same standard accommodations to all performers, with or without disabilities, such as a wheelchair ramp or a tactile marking to access the stage. While it offers an improvement over no access at all, this approach often fails to address the varied and complex needs of all artists with disabilities. For instance, when a venue says that they are accessible, it frequently means that they offer a general accessible seating area for audience, but no access to the stage for the performers. Moreover, these accessible seating spaces are frequently located in spots where visibility is reduced. When the stage is accessible, a ramp might be provided but it might be very steep, or it might not be wide enough, thus not usable for all mobility devices, and most of the time it requires performers to enter through a separate, less dignified entrance. Another example is the offering of an assistive listening system, but assuming it is a one-size-fits-all solution for all hearing impairments. This overlooks the need for other types of auditory assistance, such as sign language interpreters for Deaf performers and audience members. An equity-based approach acknowledges the different starting points of performers with disabilities and provides customized resources to ensure they have an equal opportunity to perform. It focuses on the end result, meaning full, dignified participation, rather than on providing identical accommodations. It adopts Universal Design principles. According to Centre for Excellence in Universal Design (CEUD), based in Ireland:

Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. An environment (or any building, product, or service in that environment) should be designed to meet the needs of all people who wish to use it. This is not a special requirement, for the benefit of only a minority of the population. It is a fundamental condition of good design. If an environment is accessible, usable, convenient and a pleasure to use, everyone benefits. By considering the diverse needs and abilities of all throughout the design process, universal design creates digital and built environments, services and systems that meet peoples' needs. Simply put, universal design is good design. (CEUD, 2025)

The CEUD mentions seven principles in its guidelines, with advice that can be applied to all situations. These principles include equitable use, flexibility, intuition, perceptible information, tolerance for error, low physical effort, size, and space.

According to the CEUD website, these principles “may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments” (CEUD, 2025). For performers with disabilities, this means building venues from the ground up to be accessible to everyone, rather than adding accommodations as an afterthought. Examples include push buttons to open doors, wide hallways, tactile guides on the ground, and adjustable-height stage platforms. Accommodations are also considered as an integral part of the design, including offering a range of communication supports, such as sign language interpreters, captioning, or visual aids for Deaf or neurodivergent artists, but also considering the entire performer experience, including accessible dressing rooms, restrooms, green rooms, and pathways from the backstage area to the stage.

Universal Design applied to performers recognizes that accessibility is not just about getting onto the stage, but about the entire professional process. A venue with flexible seating and stage configurations can be more responsive to the specific needs of

different performers and moves away from a rigid structure that may favour one type of performer over another. The distinction between equity and equality is not merely semantic, it profoundly impacts the careers of performers with disabilities. However, in a recent study, design specialists Per-Olof Hedvall, Agneta Ståhl and Susanne Iwarsson have criticized Universal Design (UD) as a concept, arguing that there is an overall confusion between accessible design and universal design:

So far, UD has been plagued by an understanding close to or confused with the definition of accessibility, not the least in policy documents. Thus, UD has often been evaluated and used prescriptively in similar manners to accessibility and usability. (...) UD was originally conceptualised as being about societal attitudes, democracy, citizenship, equity, flexibility and social inclusion. Consequently, if UD at all should be evaluated, it ought to be done on the premises of how such factors are assessed and not based on operationalizations of accessibility and usability. Therefore, we propose using accessibility and usability to translate UD into practice and argue that all three concepts are needed. (Hedvall et. al., 2025, 4)

Although I agree with these researchers that accessibility is predominant in this design concept, I believe that Universal Design is an evolving approach that allows architects, designers, or conceptors, to consider a variety of parameters in producing designs usable to all.

If today people with disabilities know how to fight for their rights, following the Human Rights model principle, it is thanks to the pioneers in disability activism who spent countless hours negotiating and discussing with politician and lawyers, protesting in streets, tired of being considered invisible. Just like the civil rights movements progressed and people battled for their own guarantees of equal social opportunities and equal protection under the law – the right to vote, to receive an education, to have a recognized identity, regardless of race, religion, or other personal characteristics – the disability rights movement has fought for equal opportunities and equal rights for all

people with disabilities. We shape our identity with our lived experiences, our pains, our losses, our reflections, our victories. We want to feel useful, to belong. We share these experiences and bring them to a collective effort. Activism works better as a group in which individuals can share what worked and what did not, inspire others with advice, give examples, carry the words to a broader audience, and reach as many people as possible.

But what happens when the voice is not listened to, or only with difficulty? People with disabilities struggle to be heard in our current society. In order to include people with disabilities, laws have been passed, nationally and internationally. The common thread between these laws is that they demonstrate intention, but they have not been fully implemented. Society is still not ready to become entirely accessible. Many believe that it will cost too much money. Although it is potentially more expensive for these companies to not comply, fines and penalties are seldom imposed. These laws supposedly positively impact disability inclusion in the music industry, including music education, and visibility of performers with disabilities in the musical scene. There are now governmental supports such as grants, although companies struggle to find them.

Examples of Human Rights models are also found in disability activism groups and ensembles fighting for more visibility on stage and access to venues. The motto “Nothing About Us Without Us” has been used by Disabled Peoples Organizations as part of the global movement to achieve the full participation and equalization of opportunities for, by and with persons with disabilities (United Nations, 2004). In recent years, driven by this motto, artists with disabilities have formed coalitions, with the idea that one voice is not enough to change things, but many voices together might make a

difference, following the path of the Disability Right Activists from the 504 Sit-In. The examples that follow illustrate the federation of musicians with disabilities and the projects they were able to create, that still exist and grow today.

Here again, in order to create successful programs defending both the rights of people with disabilities and a good integration to society, the concept of a good program design, such as Universal Design useable by all, is important. I kept this principle in mind when I created my own music education framework and workshops. Let us look at examples of successful programs which are still active today.

‘Attitude is Everything’ is an organization based in the UK that “connect(s) disabled people with music and live event industries to improve access together” (Attitude is Everything, 2025). It was launched by Suzanne Bull and her team in 2000. Financially supported by the Arts Council England, Attitude is Everything has worked for more than 20 years to improve accessibility for deaf and disabled audiences, artists, volunteers and professionals in the live music and events industries. More than 200 venues and festivals across the UK have joined Attitude is Everything’s Charter of Best Practice.

In 1999, Arts Council England offered Suzanne Bull a grant to run a pilot programme to improve disabled people’s access to live music. The pilot program was successful, and in 2000, the Attitude is Everything Charter of Best Practice and pilot programme was launched at Camden Dingwalls, London. They also signed their first 10 Venues to the Charter, recruited 10 disabled ‘Mystery Shoppers’ – volunteers to collect feedback about gigs at those venues – and they produced their first ever project report on what access was like for disabled music fans at the time. In 2005, their Disabled Stewards

Festivals Programme launched at Glastonbury. In 2008 they became their own independent charitable organisation and limited company and receive their revenue grant from Arts Council England. In 2019, they hosted their first awards ceremony, the ‘Outstanding Attitude’ Awards at Islington Assembly Hall. 2020 marked their 20th anniversary. They started their Accessible Employment Guide at the Moth Club, East London. In 2021 they founded the Audience Access Alliance, a coalition of 13 disability and access organisations and networks. Their revolutionary approach was a game changer for artists with disabilities but also for venues who started integrating best practices and signing the chart. It is also worth mentioning the role of Arts Council England who financially supports many artists and groups working with artists with disabilities in the UK. The country was one of the first in the world to encourage initiatives involving the disability arts sector. In April 2025, Suzanne Bull announced that, after 25 years leading Attitude is Everything, she stepped down to allocate more time to her career as a freelance consultant, “bringing her passion and expertise in arts, culture and Breast Cancer advocacy to new spaces” (Attitude is Everything on LinkedIn, April 14, 2025).

Another organization that follows the Human Rights Model and is supported by Arts Council England is the Paraorchestra, an ensemble of disabled and non-disabled professional musicians that aims to blend artforms, genres, and technology to create large-scale music projects that challenge ideas of what an orchestra can and should be. It was co-founded by conductor Charles Hazlewood and television director Claire Whalley in November 2011. The Paraorchestra made their debut at the Closing Ceremony of the London 2012 Paralympics. Charles Hazlewood is a conductor with an international reputation who directed many ensembles, including the Swedish Radio Symphony

Orchestra, the Copenhagen Philharmonic, and the Philharmonia Orchestra, as well as the Gothenburg Symphony Orchestra, Malmö Symphony Orchestra, Danish Radio Symphony Orchestra, Royal Concertgebouw Orchestra and Orchestra of St Luke's, New York. He won first prize in the European Broadcasting Union Conducting Competition during his early twenties and is now a significant presence on British television and radio (Hazlewood, 2024). Paraorchestra exists to recognise and showcase disabled musicians with extraordinary abilities, and to demonstrate their full integration into orchestral music. Their aim is to shift perceptions of disability in creating a visible platform for disabled musicians who are able to perform at a high level appropriate for the ensemble dynamic, integrating talented players with disabilities into mainstream performances. The ensemble plays an unconventional mix of acoustic, analogue, digital, and assistive technology instruments, drawing on the unique talents of their musicians and collaborating with high profile artists from across genres to create new and accessible orchestral music experiences. This project continues to evolve. Its dynamism is generated by the talented musicians involved, as well as the interaction between the performers and the audience. Today, they are the only orchestra in the world pro-actively increasing their representation of professional disabled players, whilst creating meaningful opportunities for world-class music making and career development. The organisation applies a person-centric method of working that prioritises consultation and collaboration with each individual, in turn removing the barriers that prevent disabled players from performing at their very best (Paraorchestra, 2024).

1.4. Minority Model

Cases such as Attitude is Everything and the Paraorchestra question the definition of inclusion and exclusion, considering disability as part of diversity as opposed to deviance. According to Disability Studies scholars David Mitchell and Sharon L. Snyder, disabled people are

survivors of the micro-technologies of normalisation in rehabilitation, charity, education, psychology, social work and the social service industries. These are all disciplines that separate, measure, data collect, diagnose, train, correct, advocate and, generally, normalise people with disabilities in order to improve and, ultimately, assimilate them. In this context we employ ‘normalisation’ as a practice intended to mitigate the stigma assigned to disability through the techniques of disguise, supplementation, masking and, most importantly, the devising of strategies of passing. (Mitchell & Snyder, 2012, 46)

“Passing,” here, is used like a test of “passing as non-disabled,” for instance those with non-visible disabilities who could “pretend” not to be disabled. The notion of “normalization” in disability first appeared in the 1970s in studies led by Wolf P. Wolfensberger in mental health institutions. In his book *The Principle of Normalization In Human Services*, published in 1972 (and at the time “sponsored by the Canadian Association of the Mentally Retarded”), he considers normalization as bidimensional. The first dimension was interaction, emphasizing the importance of high expectancies for people, of opening doors of opportunity and not unnecessarily segregating people, especially from models of adaptive behaviour, broadly defined as an individual’s ability to meet the standards of social responsibilities and independence. The second dimension was interpretation, highlighting how people with disabilities were portrayed in the media and in society, in devaluating representations, juxtaposing different conditions such as disability, age, wealth, etc., to define what is “normal” and what is not in these

representations. This dimension was the closest to what is called the minority model of disability.

Disability Arts and Disability Culture, also called the Cultural Model of Disability, emerged in the 1980s following minority models expressing themselves through the arts. These artistic groups aimed to claim their disability identity, combined with principles of the social model. Several movements were born from this concept, including Deaf culture and Crip Culture. The d/Deaf culture has an interesting approach. There is a part of the deaf community defining deafness, not as a disability but as a fact. They divide into two groups of deafness: one with a lower-case d, deaf, and one with a Capital D, Deaf. As an example of this distinction, Capital-D Deaf people refuse to have cochlear implants because it would defend the medical model – forcing a cure – and they support the social model, which implies integration in society in several areas, such as arts and education. Linguistically, those who speak with sign language fight for more sign language education. Sign language is a language like any other language that should be learned. Artistically, they defend the fact that the arts are not only reserved for hearing people, but there are also other ways to hear. There is this preconceived idea that consists of thinking that to be deaf means “silence,” and to play music means “sound,” so the two cannot come together. This assumption is, of course, erroneous. There are multiple ways of experiencing music. The Scottish percussionist Evelyn Glennie, who is profoundly deaf, dedicated her life to educating people on a different sense of hearing. In an essay written in 2015, she explains:

Hearing is basically a specialized form of touch. Sound is simply vibrating air which the ear picks up and converts to electrical signals, which are then interpreted by the brain. The sense of hearing is not the only sense that can do this, touch can do this too. If you are standing by the road and a large truck goes

by, do you hear or feel the vibration? The answer is both. With very low frequency vibration the ear starts becoming inefficient and the rest of the body's sense of touch starts to take over. For some reason we tend to make a distinction between hearing a sound and feeling a vibration, in reality they are the same thing. (...) Even someone who is totally deaf can still hear/feel sounds. (Glennie, 2015)

Feeling music is not the only way of experiencing it. In her recent book *Seeing Voices* (2025), Dr. Anabel Maler, an Assistant Professor of Music Theory at University of British Columbia who specializes in analytical studies of sign language music, introduces the aspects accompanying sign language music interpretation, such as signing voice, sign language melody, and sign language rhythm and meter. Most people associate music with sound; thus, the definition of a music performance from a signed language point of view is problematic:

Music performed in a signed language poses considerable challenges to the established definition of music as organized sound. It raises important questions about the kind of analytical resources that are afforded by the work's musical parameters, which are created by the moving, signing bodies of the performers. In other words, for Western music theory, which is so practiced at analyzing musical sound, sign language music poses a fundamental definitional problem. (Maler, 2025, 3)

The association of music and movement is strongly present in some art forms such as dance, but the association of movements as an interpretative form of music is still in an emerging phase. More and more performers choose to hire a sign language music interpreter. The interpreter Justina Miles' performance of Rihanna's Super Bowl Halftime Show in 2023 created a buzz since people are usually unaware of the practice, or only think of sign language as speech interpretation, not lyrics. A good sign music interpreter not only redefines what a song is, but also shows the corporality associated to a song regarding words and rhythm. Sign language music becomes part of the song itself.

In a way, it reminds me of Universal Design: if sign language music is part of music, not only hearing people will enjoy the performance when the “final product” is delivered. Everybody will appreciate the enthusiasm, the dancing body, and the visual poetry of sign language music.

Elizabeth Sweeney, an accessibility educator at the National Gallery of Canada, followed the principles of the Minority Model when she proposed new accessible strategies to visit the museum, experimenting with diverse artistic forms to experience art. She created and expanded the “Art for All” accessibility programs, about which she wrote an article titled “Walking with Janet Cardiff, Sitting with Massimo Guerrera, and Eating Apples with R. Murray Schafer: Meaningful Museum Experiences with Participatory Art for Visitors with and without Visual Impairments” (2009). One of these programs, “Stimulating the Senses,” was based on Canadian composer R. Murray Schafer’s research on soundscape, which is the exploration of sound in the surrounding environment. The aim was to allow blind and partially sighted people to “hear the art,” in a multisensory interactive participation around a specific painting, sculpture, or art installation. Sound was at the center of the experience. The sound was recorded in Binaural audio, a technique allowing the positioning of the microphones to create a 3D audio environment. The participants were immersed in the universe they needed to explore. They could listen to a recording of noises (footsteps, voices, music, etc.) related to the piece of art, a narration of a story around it (for example the “walks” created by Janet Cardiff and George Bures Miller), or even of the sounds of their own body reacting to it. When Murray Schafer was invited to one of the sessions, he arrived with “a bag of fresh Ontario apples for participants to bite into, reminding them to take note of the taste,

the smell and the sound of this extraordinary and multisensory experience” (Sweeney, 2009, 241).

Disabled musicians also experiment with concepts of the Minority Model in creating pathways to inclusion in the performance of music. One of the artists I conversed with for my research, a blind pianist called Michael recently shared with me his desire to create a multisensory show based on smell, touch and sound. Multisensory exploration is already well developed for Deaf artists who use a combination of vibration, touch and visual representations or projections to perform. In a specialized laboratory in Hamilton in Canada, called VibraFusion Lab, vibration specialist David Bobier and high frequency design engineer Jim Ruxton work on many projects for which sound is converted into vibration and carried in devices allowing to experiment vibration, for instance through a vibrating wall made of speakers, a wheelchair accessible wooden vibrating floor, or vibrating cushions that one can hold. VibraFusion Lab is today one of the leaders of sound vibration in artistic performances and works worldwide.

1.5. Critical Disability Studies and Music: Literature Review

I was surprised to find a limited amount of writing on the subject of disability and music in the existing literature, as the intersection between disability and other cultural domains has been studied more deeply. The reason, in my opinion, is that music was the last artistic practice to be considered as accessible or open to disabled people: Deaf people cannot hear music, so they are excluded from music; someone born with a limb difference cannot hold an instrument in a traditional way, so they are excluded from music; someone using a mobility device cannot access stages, so they are excluded from

music; there was no (or little) research about disabled musicians in historical musicology, so disabled musicians were considered out of the scope of historical musicology. When musicians with disabilities started to appear more on stage and break the assumptions, there was a shift of point of view.

The first articles published on disability and music were mostly focused on the concept of the bodily difference of musicians with disabilities. The music theorist Joseph Straus was the first to write about the topic of disability in music from a critical perspective, in his paper “Normalizing the Abnormal: Disability in Music and Music Theory” (2006). In this seminal article, he explored the interconnected histories of disability and music as they are manifested in theoretical approaches to late eighteenth- and early nineteenth- century Western music, especially in works by Beethoven and Schubert. After defining the relationship between critical disability studies and music, the author analyses how language about music and music itself may be understood to represent, to construct and to deconstruct disability. Straus also considers disability and music alongside nationality, ethnicity, class, gender, and sexual orientation. All of these intersections are explored with the idea that disability is defined as a “culturally stigmatized bodily difference” as opposed to an entity defined by “normative standards” that can vary depending on the intersecting domains examined. Straus argues that, in each context, music can assist in constructing disability. When the audience is looking at the performance of an artist, how does the body’s appearance change the perception they have of the artist? He highlights that the feeling of discomfort of the audience facing a person with a disability could transform into questioning (i.e., “how can this person perform without an arm?”) or pity (i.e., “poor musician, it must be so difficult!”). The

construction of disability refers to the ways in which society “creates” disability and understands it, and how it finds its roots from other similar concepts:

The construction of disability involves the opposition of a normative standard (male, white, straight, able-bodied) and a deviant Other (female, non-white, gay, disabled). By “bodily,” I refer to the full range of physical and mental differences to which the human body is subject, whether congenital or acquired, including physical and mental illnesses or diseases, temporary or permanent injuries, and a variety of non-normative bodily characteristics understood as disfiguring. By “stigmatized,” I refer to any negative social valuation. Obviously, the value assigned to any particular bodily difference will vary from context to context. Non-normative bodily features and, as we will see, non-normative musical features, may be understood as either desirable or disabling, depending upon the context. (Straus, 2006, 119)

This article is important since it opens the gates for academic literature about critical disability and music. Straus depicts the disabled person often seen by able-bodied observers as non-productive, and thus unable to sustain a role in society. In music, a disabled artist missing a part of the body is not “complete” and therefore might not be perceived as being capable of carrying the title of artist. Straus develops many ideas about “embodiment” and “experientialism” which I find confusing, particularly in his attempt to draw a parallel between disability and body position (balance and verticality) through a series of quotations from music theorists. His aim is to demonstrate a “disability-inflected version of experientialism” (106). Experimentalism is the philosophy of relying on direct experience and experimentation, and the empirical observation of consequences, to find truth and understanding. Straus argues that experience is counterbalanced by threat:

All of us, the normatively abled as well as the disabled, have experiences of disability and of the threat of disability. Indeed, disability and the threat of disability are central to our experience of our bodies and are implicated in our conceptual image schemas to a degree far beyond anything acknowledged by Lakoff and Johnson. We learn to experience BALANCE in moments when it is

threatened or overturned by IMBALANCE. We can never experience BALANCE directly; rather, it is always experienced in relationship to its opposing term. (Straus, 2006, 125)

The concept of bodily imbalance intertwined with music theorists' thoughts is not completely clear to me in Straus' article, but becomes more understandable in the work of another prominent author, the musicologist Blake Howe, in "The Allure of Dissolution: Bodies, Forces, and Cyclicity in Schubert's Final Mayrhofer Settings" (2009). This article examines Franz Schubert's work on a cycle of four songs with texts written by his close poet friend Johann Mayrhofer. The author discusses notions of artistic, medical, sexual and philosophical aspects of this collaboration, along with their relations to music. Howe considers the concept of body as limit, with its strengths and weaknesses (or abilities and disabilities), and the impact of the texts chosen by Schubert for his compositions on his physical and mental health and his music. This conceptual essay also includes a full musical analysis of the cycle, considering the use of musical modes, chord progressions and keys as a reflection of the state of mind of the composer, relating the music and the lyrics of the song cycle to the medical realities of Schubert's and Mayrhofer's health. He goes from outer observations to inner musical representations. Howe first observes:

Operating within a Cartesian separation of mind and body, both Mayrhofer and Schubert seem to see the physical world as a hindrance to an inner, immaterial being; externality suffocates internality, and so that which is internal must fight back. (Howe, 2009, 278)

Later, he goes deeper into the music:

This metaphor is embodied physically in the stretching and shrinking motions of the pianist's left hand and the interior fingers of the right hand; note how Schubert's chosen registration of the notes in the right hand (E below G, not the

other way around) contributes to the quality of these motions. And the metaphor conforms with expectations of traditional harmony: nonfunctional, unstable, and (to use Goethe's word in *Zur Morphologie*) "metamorphic," chromatic mediants branch outward, into the harmonic unknown; the collapse inward returns us to diatonic familiarity. (Howe, 2009, 289)

This work offers a level of granularity in which Howe descends from a purely medical description of the two artists' bodies to the emotional state of mind of the two friends, which is done with precision in the study, going from medical consideration of emotional states impacting the social life of the two men, and their artistic works. The fact that Howe defines artists as disabled not only because of physical afflictions impacting their bodies (Schubert contracted syphilis) but also because of the stress they experienced was new in the academic literature. It leads to the idea of defining disability in the context of depression, and not only based on physical considerations.

Howe also developed the idea of duality and opposition of the body in physical disabilities, in his article "Paul Wittgenstein and the Performance Of Disability" (2010). The essay proposes a full analysis of the life of Paul Wittgenstein, a one-handed pianist who lost his right arm on the battlefield during World War I, famous at the beginning of the 20th century. Howe studies the conflict between concepts of disability ("one-handed") and ability ("pianist"). He questions the way the body is viewed as different, either as an abomination ("to have a missing limb is horrible"), or as extraordinary ("it is incredible to be able to perform with one hand"). He uses a number of other one-handed pianists¹⁰ to illustrate Wittgenstein's virtuosity and highlights the paradoxical position of being a

¹⁰ "Géza von Zichy (amputee, hunting accident), Otakar Hollman (amputee, war injury), Siegfried Rapp (amputee, war injury), Harriet Cohen (severed artery, broken glass accident), Cor de Groot (temporary infection), Cyril Smith (stroke), Gary Graffman (focal dystonia), Leon Fleisher (focal dystonia, recently treated with Botox), Keith Snell (focal dystonia), Antonio Iturrioz (cartilage damage, sport injury), and João Carlos Martins (victim of assault), among others" (Howe, 2010, 138).

one-handed pianist recognized for his musical abilities, virtuosity, and dexterity. With illustrations of musical examples seemingly impossible to perform with one hand, the author shows how the body adapts to the condition to achieve its aim. Interestingly, in both articles (“The Allure of Dissolution” in 2009 and “Paul Wittgenstein” in 2010), Howe’s approach is to consider both the medical model and the social model of disability. He feels that a social model frame is more accurate and productive. He suggests that a missing hand cannot “be cured” by doctors (in reference to the medical model of disability), but music can be adapted to allow someone with one hand to participate and perform, and to advance in his or her career (in reference to the social model of disability). These two opposites have been represented in many CDS studies. Howe attempts to explain it in the “Paul Wittgenstein” article:

Unaccommodated disability occupies an uncomfortable position within modern concert performance, which typically serves as a vehicle to showcase able-bodied talent. Though certain musical abilities such as virtuosity push the body to and beyond its capacity for finesse, dexterity, and strength, disability is a reminder that the body is in fact finite and extraordinarily fragile, susceptible to injury, sickness, and ultimately death; disfigurement conjures imagined histories of pain, violence, disease, or, in Wittgenstein’s case, war. The disabled musical performer –embodying these two extremes – disrupts and exposes the inherent contradictions in what Tobin Siebers terms the “ideology of ability,” defined broadly as a “preference for able-bodiedness” that propels modern cultures to suppress bodily weaknesses, against all odds, whether through eugenics, biotechnological advancements, cosmetic surgeries, or religious belief in a blissfully disembodied afterlife. (Howe, 2010, 143)

As in his previous article, Howe analyses the music to explore the diverse adaptations made by Wittgenstein to be able to perform with one hand pieces that were written for two hands, and how the opposite – arranging and adapting piano pieces composed for one-hand to two hands– was also done, which was designated as “normalizing”.

Normalizing is an important concept in disability literature: the notion of ‘normal’ entails the idea of difference. Exploring what made a body “normal” versus “abnormal” based on physical observations by the medical world was already done in previous literature about disability in a social context (Garland Thomson, 1997; Linton, 1998; Mitchell & Snyder, 2001), mentioned earlier in this dissertation, but Straus and Howe were the first to apply these concepts to music studies, with a focus on Western Art Music composers and musicians.

Shortly after Howe’s article about Wittgenstein, Alex Lubet published *Music, Disability, and Society* (2011), which proposed a well-designed approach for both scholars and a broad audience to examine the social impact of disability in the Western and non-Western worlds, not only in classical music anymore but also in jazz music, Egyptian music, religious music, and in music education. The book chronicles a collection of “encounters” between disability and music defined within rigid musical institutions, such as conservatories or symphony orchestras, and the ways in which disability is understood and treated in our society, and in music in particular. It offers a variety of perspectives from musicians with different disabilities, all considered from the social model of disability (that societal organization, not an individual's impairment, is the cause of disability). Lubet’s approach with this collection is to consider disability identity as a constantly evolving topic:

Simply rendered, the theory of social confluence states that modern society does not consist of stable, intact units of identity known as individual human beings but rather of people whose identities morph constantly with changing circumstances or contexts. Such change and the demand for flexibility it requires for both material and psychological survival are much in evidence in the lives of musicians. (Lubet, 2011, 10)

This book is well aligned with my own research, as it considers the social model applied to lived experiences of musicians with disabilities in different contexts, with the idea that the field continually evolves.

Following Lubet's book, George McKay published *Shakin' All over: Popular Music and Disability* (2013), the first book about disability in popular music. Starting with an introduction about the social model and referring to existing literature about music and disability, McKay presents examples of representation of musicians with disabilities from the end of the nineteenth century to today, with intersecting contexts of race, performance practices, musical genres, physical and sensory differences, and disability. His objective is to broaden the scope of analysis of musicians with disabilities to include pop music, which had rarely been discussed before: He also provides an interesting analysis of the iconography in photographs, advertisements, covers of album records and films, onstage and offstage, to show the evolution of graphic representations of people with disabilities in music, instead of interpreting scores and texts only. It allowed scholars to dive into subjects other than physical and emotional disabilities, but also sensorial. This book gave me a better understanding of the perspective of musicians outside Western Art Music.

Jessica Holmes' work on music and deafness (2017) explores the musical representation in Deaf Culture, the use of sign language, and the rejection of the term "disability" in relation to Deafness in the d/Deaf¹¹ community. This article was the entry point of my study about vibrations in music, and considerations about other forms of

¹¹ d/Deaf, as I mentioned previously in this dissertation, is used as a collective noun to refer to both those "Deaf" people who identify with the Deaf culture and those "deaf" people who do not. This definition can be found on the Canadian Association of the Deaf webpage, 2025.

listening. The Deaf community (with capital D) feels that Deafness is a culture and thus does not need to access non-Deaf culture. They create and access their own art. Holmes presents the definition of the community as given by d/Deaf specialist Paddy Ladd, who says that “From the standpoint of Deaf culture, deafness is not a disability; rather, to be Deaf is to belong to a cultural-linguistic minority, a ‘visual variety of the human race’” (Holmes 2017, 177).

As an example of a case where d and Deaf cultures meet, the author uses the artistic works of Deaf percussionist Evelyn Glennie, who can “hear” music by feeling it through her body, and Deaf sound artist Christine Sun Kim, who creates visual art pieces based on amplified vibrational sounds. My own interview of Evelyn Glennie and of two other disabled musicians led me to write an article titled “Assumptions of Normality: How Three Women with a Disability Changed the Face of Music,” published in *Women's Leadership in Music* (2023), edited by Iva Nenic and Linda Cimardi, I present the careers of three musicians with disabilities, and how they changed the music industry: the percussionist Evelyn Glennie, the violinist and singer Gaelynn Lea, and the pianist and singer Lachi. This was an international project led by a team of researchers in Europe. This chapter is based on interviews I made of the three artists, from which excerpts are present in this dissertation. In this work, I discuss the preconceived notion of deafness and music being incompatible, with Glennie’s own lived experiences of being perceived as less capable because of her deafness, and how she progressed in her career to become a renown and frequently invited solo percussionist. Lea, living with a physical disability, and Lachi, living with blindness, share the desire for more recognition of their work in mainstream music. They both advocate for their rights and the rights of other artists with

disabilities, with topics such as accessibility to venues, awareness of what disabled artists can or cannot do, language used to mention disabled people, and how to support the community. The three testimonies, although all discussing disability in music, offer different understandings based on location (Glennie lives in England, Lea and Lachi in the United States), music education, lived experiences of disabilities and periods during which they were lived, and integration into the society.

Holmes's article "Expert Listening beyond the Limits of Hearing" highlights the physical and emotional impacts on the artists and the audience when sound and music are used "beyond sensory ideals." It made me go back to my own Beethoven research about the different strategies the composer adopted to progress in his own career, which I will mention later. Ludwig van Beethoven's loss of hearing has of course been well explored in specialized literature; one book, in particular, treated the subject using a Critical Disability Studies perspective, looking at the impact of progressive deafness on integration in society. Robin Wallace's book *Hearing Beethoven* (2018) offers a critical analysis of the composer's disability and its effects on his social life. This contrasts with other reports on Beethoven's deafness that explored strictly medical elements and looked for the causes of the composer's disability. In his work, Wallace gives the reader an overview of all medical discoveries, but most importantly, he goes further by highlighting how Beethoven's lack of social interactions and decreasing hearing affected his compositional style. Wallace relates it to his personal story, more precisely the story of his own wife Barbara, who suffered from a progressive loss of hearing in the early 2000s. Wallace narrates the way Barbara adapted to listening to music as an important element of her life through the progression of her disability and bridges the two periods and

stories between Beethoven and Barbara. For instance, readers follow how a progressive hearing loss impacts communication with the rest of the world:

The next few months were like Beethoven's experience condensed into a shorter and more challenging time frame. Like Beethoven, Barbara found herself isolated socially to a degree that had not seemed possible before the catastrophe set in. Absolutely everything that was said to her had to be written down. No interaction with groups was possible. She couldn't hear what was said at church, which had always been an anchor for her life. Public entertainment was off limits. Music vanished. The world became a prison cell devoid of anything beyond its gray concrete walls. (Wallace, 2018, 55)

Wallace's approach of drawing parallels with contemporary effects of hearing loss is fascinating. The author also dives deeply into Beethoven's music at different stages of his deafness, proposing a different reading of the scores; for example, he highlights the increasing use of certain ranges of notes and chords while his audition was decreasing and the application of visual elements which might have guided the composer's creativity, in relation with recent discoveries about Beethoven's hearing devices installed on his piano in the last years of his life, redirecting the sound toward him, following the same pattern as his acoustic hearing trumpets. For him, these adaptations might be the reason why Beethoven's music is so attractive to people:

Beethoven's success can be measured by the fact that he not only continued composing but ventured further and further afield as his deafness grew. Is it possible that the extraordinary creativity of his middle and late periods took place not despite his deafness but because of it? By looking closely at the way he created the music on which his reputation rests, we can see how he used both writing and the keyboard to nudge new sounds and textures into existence, perhaps inadvertently rewiring not just his own musical brain but those of generations to come. As his failing ears increasingly forced his eyes into the driver's seat, he created new musical textures and new approaches to musical form, forever changing the experience of music for those who came after him. (Wallace, 2018, 174-175)

This fascinating study presents all the recent discoveries in research about Beethoven's deafness. It was particularly interesting to me as a Beethoven scholar, to reshape my own perception of Beethoven's career with recent disability studies based on the social model of disability.

My desire to apply this new understanding to contemporary composers pushed me to write another article entitled "*Perspective: identity and voice from a critical disability lens*," planned to be published in the *Routledge Companion to Voice and Identity* at the beginning of 2026, edited by Amy Skjerseth, Freya Jarman and Naomi André. In this essay, I explore the definitions of voice and identity seen from disability perspectives through the work of the composer Molly Joyce. Voice and identity are two concepts frequently discussed in disability studies, but they mean something different in the context of music. For me, a disability identity is the recognition of its disability by an individual, whether it is assumed or not. It can take multiple forms, from pride to rejection, or even denial, but it starts with the notion of recognizing a form of disability. A disability voice draws on the idea of communication of this recognition, especially through the sharing of lived experiences. It can be advocacy and activism, education, writing, or group discussions. However, in music, it goes beyond communication. There is a perceived idea of a voice being heard from a physical point of view, with vibrations and sound, with speech or singing, which excludes a number of individuals with disabilities who are non-verbal. What I like with Joyce's work, especially with the multiple-stage project *Perspective*, is the integration of disability identity and disability voice through her interviews with disabled people in North America and in Europe, based on question about several controversial topics in the disability community, such as

access, care, control, weakness, strength, cure, interdependence, assumption and isolation. Each topic comes with excerpts of the interviews and a musical work composed and performed by Joyce herself. The book chapter follows the evolution of the project, from its conception to examples of presentations in concerts, museums and public places.

The works written by Lubet, McKay, Homes and Wallace offer new ideas in disability studies related to music, with modern concepts closer to the lived experience of disabled musicians today. However, they have been written from the perspective of one author only. Several edited collections presenting a variety of aspects on music and disability studies emerged at the same period. In 2006, Straus and Neil William Lerner published an anthology of articles in *Sounding off: Theorizing Disability in Music*. This first edited volume on disability and music is an important source on the subject, and most of the articles draw on theoretical concepts. This book is divided into three parts: the representation of disability in music; disabled performers; and disability in music composition. I particularly liked how the notion of “overcoming disability” criticized in the introduction written by Straus and Lerner, arguing that people with disabilities do not “overcome” disability, but work around and with it, taking Beethoven’s case as an example, and then applying it to all musicians with disabilities:

Once one starts to think about music through the lens of disability, disability suddenly appears everywhere—in the bodies and minds of composers and performers, in the reception histories of musical works, and even in the works themselves, embedded there in the form of persistent narratives. As a paradigmatic example, Beethoven’s deafness, which has played such an important part in the reception of his music, has given rise to what disability scholars call the *overcoming narrative*: The central part of the mythology around Beethoven involves his decision to grab fate by the throat and—instead of killing himself over the loss of his hearing—to continue to compose. The person with a disability, in this case the increasingly deaf composer, overcomes the impairment, as perceived by people without disabilities, to relieve them of their own anxieties about experiencing similar fates. (Lerner & Straus, 2006, 1-2)

The idea that society likes to create stories about disabled people, turning them into either heroes or objects of pity, is important. Historically, people with disabilities had to learn how to “work around” their disabilities to progress in their lives, which is one of the principles of the social model. The obstacle is the way society sees disability. This subject of perception of disability was mentioned several times by the musicians I interviewed for my research, and I will address it again in chapter 2.

The authors who wrote for the collection edited by Lerner & Straus were pioneers on the subject of disability and music in CDS. Sixteen researchers proposed analyses and theories on the past, present and future of disabled musicians, performers and conductors in relation to disability, as well as other intersections. It deals with important topics such as the boundaries between disability and illness, the musical representation of pain, music and grief, stereotypes in musical movies, one-handed pianists as horror figures, stuttering and music, autism and music, voice and damage, madness and mental illness in compositions, and autism in compositions. Because of its range of topics, the volume brings different insights to the subject, enriching conversations and perspectives about disability in the music field; however, my overall feeling about this collection is that the medical aspect still has a central role in most of the essays presented.

Another important anthology, *The Oxford Handbook of Music and Disability Studies* (2016), represents a major contribution (again co-edited by Straus and Lerner, with Howe and Stephanie Jensen-Moulton) with forty-two chapters on a range of topics offering a variety of disciplinary perspectives. Divided into eight parts, it offers an extensive study of the impacts of disability on the musical world in communities,

performances, race, gender, sexuality, war, and trauma, covering diverse musical styles, such as classical, modern, film and musical theatre. It is the first collection exploring mental disabilities in music:

Cultural Disability Studies has, from its inception, been oriented toward physical and sensory disabilities, and has generally been less effective in dealing with cognitive and intellectual impairments and with the sorts of emotions and behaviors that in our era are often medicalized as “mental illness.” (...) This is one of the areas in which music scholars have their opportunity to make a significant contribution to Disability Studies – our nonverbal art form may make it easier for us to discuss the representation of affective states, without the distraction of narrative or dramatic language. (Howe et. al., 2016, 6)

This book is a major achievement: not only was it the first such comprehensive anthology, but it comprised all the specialists of the time (including some CDS and music authorities, such as authors of books and articles already mentioned, but also Laurie Stras, Jeannette DiBernardo Jones, Anabel Maler, Stefan Sunandan Honisch and James Deaville, to name only a few), opening the discussion to intellectual disability, autism, deafness, sign language music, blindness, technologies, embodiment, classical music, rock and pop music:

Amid this diversity of time, place, style, medium, and topic, these essays share two core commitments. First, they are united in their theoretical and methodological connection to Disability Studies, especially the central idea that disability is a social and cultural construction. Disability both shapes and is shaped by culture, including musical culture. Second, these essays individually and collectively make the case that disability is not something at the periphery of culture and music, but something central to our art and to our humanity. (Howe et. al., 2016, 6)

This collection helped me to situate music in the disability community (including some historical musicology considerations), and to consider commonalities and differences between perspectives of artists with different kinds of disabilities. It also looks at what

music learned from other artistic practices in the context of social model of disability, which guided aspects of my own research.

Téllez Vargas and Alberto Alejandro examine the performance of disabled musicians in *Disability and Music Performance* (2018), a collection of interviews with musicians with disabilities scrutinizing discriminatory social practices in music conservatories, orchestras, music festivals and music competitions. These institutions limit disabled people's access to music performance at a professional level in the world of Western classical music, both as students and as professional performers, continuing the work initiated by McKay. This publication offers new perspectives on social dynamics between normative audiences, non-disabled musicians and music critics, and musicians with disabilities. It invites the reader to recognise disability as an identity category in music performance and to dismantle the disabling barriers that limit active contributions of musicians with a disability in the professional musical world.

While the field of music and disability studies has produced a substantial amount of research using disability as a metaphor to analyse music scores – providing disability readings of music compositions and uncovering disability narratives in music – this book demonstrates the importance of attaining a balance between research developing hermeneutical interpretations of cultural texts and social research exploring the lives of disabled musicians as well as the barriers they face in music institutions. For this reason, data is also collected in the form of interviews that explore social contexts where musicians with impairments are at higher risk of facing discrimination. (Vargas & Alejandro, 2018, 6)

Disability and Music Performance became the starting point of my research, as the authors accomplished something similar to what I hoped to produce in my own research: a historical study of the presence of disabled musicians in previous centuries, and interviews of musicians from our current society. They start by tracing participation of disabled people in music-making back to the sixteenth century. They then analyse texts

and scores from these early indications, up to the twentieth century. Then they focus on current issues that musicians face with regard to disability and music: the iconography of performers with disabilities through recordings, the visual aspects of disability on stage, and the ageing musician. What interests me most is a section consisting of interviews with disabled musicians recruited from public universities with music faculties in Mexico, since it touches the question of disability in music education. Many topics are discussed: music education, performance, composition, competitions, and artistic inclusion. This thorough study inspired my own research. Shortly after reading this book, I started collecting names of musicians with disabilities in different musical periods, from the Medieval time to today.

The discussion about the role of institutions in the music world inspired me to write “Teaching, learning, unlearning: working with students and performers with disabilities in the music community,” published in *Disability and Musicking: Resistance, Defiance, and Innovation* in November 2025, edited by Leon de Bruin, Anthea Skinner and Jane Southcott. This project was led by a team of researchers based in Australia. In this chapter, I expose my own experiences of navigating music education as a student and later a teacher with disabilities in the music community. Despite an evolving society moving toward more inclusion and openness in techniques used to teach music, many educators follow the same practices they were taught in the past and do not know what direction to take to teach students with disabilities. In order to accommodate these students, teachers need to unlearn and relearn new practices. This book chapter offers my own testimony of lived experience as a disabled student, and suggestions to music

educators to change their practices. It relates to aspects of my work in music education, also presented in this dissertation.

Since the early texts of 2006, many new scholars in disability and music have emerged. More edited books containing chapters and articles written by disability and music experts have been released. Specialists have proposed new perspectives, intersecting with other fields such as queer studies, race studies and gender studies, and have also explored other musical styles that were initially ignored or rarely mentioned. Still fairly new, this study of intersections has developed to analyze and connect many aspects of both the musical field and disability studies. The current state of these intersectional fields opens up a broad range of possibilities to continue enriching existing knowledge.

Chapter 2. Historical and Current Experiences of Disabled Musicians

Performers, musicians and composers with disabilities have been historically hidden from the music profession and are not always considered in current music scene. Difficulties of integration in society due to disabilities, from music education to performing spaces, are scarcely documented in historical sources but are important for the context of situating disability as a key factor of accessing or being denied a musical education and a musical career. If my final objective is to look at the role of music education in the stories of historical and current musicians, we still need to consider other aspects of the lives of studied disabled musicians, such as integration into society, politics, professional evolution, impacts on colleagues and audience members, and other circumstances.

This chapter poses the following questions: What does authentic representation of disability look like on stage, and what role does disability-led creative process play in achieving it? How do disability-led artistic processes lead to more equitable and compelling artistic outcomes? How can the performing arts move beyond traditional ableist structures to create a more inclusive and accessible environment for disabled artists? Examples taken from different periods and types of disabilities are presented, with a part dedicated to music education and another one to tools and techniques.

This chapter offers narratives and testimonies of musicians and music professionals with disabilities in both historical research and interviews. The exploration of different societal trends, geographic areas and styles leads to a better understanding of the perception of disability from different points of view.

2.1. A brief introduction of historical facts

In Europe, prior to the mid-thirteenth century, disabled people had to rely on individual help to receive an education or find ways to work. Thus, accessibility was not a societal issue but an individual responsibility. The year 1256 was a turning point in the history of blindness in Europe: in Paris, Louis IX, better known today as Saint Louis, founded a residential hospice for the blind called the Hospice des Quinze-Vingts (Hospice of Fifteen Twenties), called this way since 300 residents (15 multiplied by 20) could be hosted. It still exists today. The medievalist Edward Wheatley gives more details:

For the residents the hospice offered basic care and some protection on the streets of Paris; for medieval Parisians the hospice became the subject of some social anxiety, partly associated with the stereotypes of blind people but partly relating to the hospice's unique institutional identity as largely separate from the church, which had previously laid claim to the institutionalized care of the disabled. (Wheatley, 2020, 42)

Before this Quinze-Vingts opened, the traditional way of receiving any education or training for a blind person was through church. This new institution was the first of the kind that allowed blind people to become more autonomous. As a result, there were many tensions between the church and the hospice. Nevertheless, residents could find work and become economically independent. Blind musicians, who were traditionally trained to become organists thanks to their local churches (we will see examples later in this section) now had other options, since musical training was also offered by the institution.

During the Medieval and Renaissance periods, people with physical disabilities had no right to accessibility. They were considered as curiosities of nature and were either hidden or found among beggars in the street. People with physical disabilities such as malformations were documented in medical books. A notorious early example is

Ambroise Paré's treaty titled *Monsters and Prodiges* (*Des Monstres et Prodiges*) written in Paris in 1573. Paré was the private doctor and surgeon of four French kings.



Figure 3 - *Des Monstres et Prodiges*

Source: Ambroise Paré (1573) - p.425

During his years of practice, he noted his medical observations and discoveries, which he published in his book along with findings from some of his colleagues and illustrated with drawings of tools and subjects of study. It consisted of two volumes. The first one shared his research about the process of giving birth and the problems that could occur with the growth of children. The second book listed humans and animals with malformities as either monstrous or prodigious. A section described a man without

arms, with an accompanying illustration (see Figure 3) on which the said man appears with several objects including what seems to be a musical instrument. The text says

(original text, modernized to facilitate understanding, followed by my translation):

On a vu naguères à Paris un homme sans bras âgé de quarante ans, ou environ, fort et robuste, lequel faisait presque toutes les actions qu'un autre pouvait faire de ses mains, à savoir avec son moignon d'épaule et la tête, ruaît une coignée [une hache] contre une pièce de bois aussi ferme qu'un autre homme eût su faire avec ses bras. Pareillement, faisait cliqueter un fouet de charretier, et faisait plusieurs autres actions ; et avec ses pieds, mangeait, buvait et jouait aux cartes et aux dés, ce qui est démontré par ce portrait. (Paré, 1573, 424-425)

We once saw in Paris an armless man, aged forty, or thereabouts, strong and robust, who did almost all the actions that another man could do with his hands, namely with his shoulder stump and head, used an axe on a piece of wood as firmly as another man could do with his arms. With his feet, he ate, drank and played cards and dice, as this portrait shows.

The chapter is called *Monstruous Men (Des Monstres Terrestres)*. It shows diverse cases of people born as attached twin bodies, with missing limbs, or covered with hair.

Apart from medical treatises, Medieval and Renaissance sources mentioning people with disabilities exist, but since religion played a large role within society, the ubiquity of disability due to illness and poor medical practices was attributed to sins, deemed as an act of God (Striker, 2019, 23). People with physical disabilities were usually represented as beggars, though rarely mentioned. Nothing was considered to integrate them into society through any form of accessibility, since they were denied the right to work. The prevailing method of transmitting information was oral and excluded many individuals with disabilities. Texts written at that time mentioned disabled people who became prominent in society, who showed their talents, for instance in music (aligned with oral traditions) or in craft (tactile traditions). Training for careers in the leisure industry or the arts did not exist for people with disabilities, except for blind

people who could use their memories to substitute their sight loss. Since education and accessibility were mostly developed for blind people, excluding deaf and physically disabled people, most of the musicians and composers who were first documented were blind. Those who memorized musical patterns and were trained to perfect their audition also became good teachers. These individuals received an education and were highly regarded professionals, thus they were frequently well integrated into their communities. These musicians created their own adaptations, but also needed help to reach their desired level of accessibility. The following sections will explore the evolution of the way musicians and composers with disabilities were perceived by the society in which they lived, and how they approached music education, musical careers, and adapted instruments and techniques.

2.2. Blind musicians: adapted tools and techniques

Historically, blind musicians were the first disabled musicians to be documented across Europe. The music industry recognized the listening skills of blind people. Those whose musical talents were detected early could receive musical instruction and later earn a salary as a musician. The works they left were copied by usually unknown students or amanuensis, though these blind musicians invented techniques to be more independent in their works. This section shows several of these inventions, both from historical research and interviews.

Conrad Paumann (Figure 4) became famous in Europe at the beginning of the fifteenth century for his adapted musical notation techniques. Born in Nuremberg, Germany, around 1410 and deceased in 1473 (Wolff, 1968, 197), he was a multi-

instrumentalist (organ, lute, recorder, harp and fiddle) and composer. He is also mentioned in Tinctoris' *De inventione et usu musice* (in English, *On the Invention and Use of Music*), as the "blind German" (Tinctoris, 1487, book 4, chapter 5).



Figure 4 - Conrad Paumann in 1447

Drawing by Heinrich Eduard von Wintter -
Source: BnF Gallica Digital Library - digital ID btv1b84234532

As a child in Nuremberg, he was supported by two patrons, Ulrich Grundherr and his son Paul Grundherr, who recognized his musical talents and paid for his training. Paumann was the first documented blind musician who received financial patronage for a musical education. We know from registers that he was the organist of St. Sebald Church in 1446, although his start date is unknown. He signed an agreement with the city of Nuremberg to remain a musician of the town, but in 1450 he broke his contractual ties and secretly left for Munich to accept the post of court organist of Bavaria. He remained in Munich until

the end of his life. He served Duke Albrecht III until 1460, then Duke Sigismund until 1467, and finally Duke Albrecht IV until he died in 1473.

During his career, he traveled in Germany, in Italy, and in France. He was known as a virtuoso who mastered all kinds of instruments and recognized for his improvisations on the organ. He developed a technique to collaborate better with his assistants (or maybe his students), which can be seen in the few written manuscripts of his compositions available today in archives. Since he was blind, he relied on copyists to help him write down his compositions. There are no sources documenting how dictations were done, however according to the German music theorist Sebastian Virdung, Paumann invented a lute tablature (mentioned in Virdung's *Musica getutscht* published in 1511, see Figure 5) that would ease the work of dictating music. This tablature was phonetic.

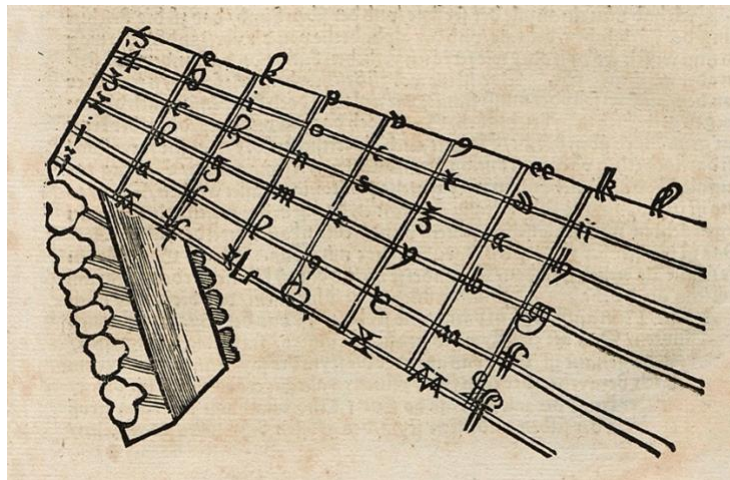


Figure 5 - Lute Tablature

Source: Sebastian Virdung, *Musica getutscht*, p. 83

Paumann also wrote (or dictated) a series of theoretical books about *Fundamenta*, which was an improvisatory style mostly used by German organists in the fifteenth

century, based on the same phonetic tablature system. The works were published under the name *Fundamentum organisandi* in 1452 in Munich. Several variations of the manuscript have been discovered, letting experts assume that several drafts, with unknown dates, were dictated before the 1452 version. Although the Staatsbibliothek Berlin, where the manuscript is kept, states that it is an original, since it was not written directly by Paumann, we do not know whether it was really the original or if it was a copy (Wolff, 1968).

In his *Musica getutscht*, Sebastian Virdung also mentioned another blind musician, Arnolt Schlick. We know little of Schlick's dates and places of birth and death. His birth was estimated to be in Heidelberg, Germany, around 1460, and his death after 1521 in Heidelberg (Marx, 2001). We do not know whether he was born blind or became blind later in life, but his blindness was documented in several sources, including Virdung's text, and Schlick's son in the preface of *Tabulaturen etlicher lobgesang* (translated as *Tablature for several hymns*), published by Schlick in 1512. Like Paumann, he relied on dictation for his compositions, but he wrote two important texts, the first ever manual in German about organ building, organ tuning and organ playing, titled *Spiegel der Orgelmacher und Organisten* (in English, *Reflections from organ builders and organists*) (1511), and the forementioned book about tablaturs (1512), the first printed German organ tablaturs, with musical illustrations and compositions (see Figure 6). When exploring the different parts of this last manuscript, one can detect different handwritings of copyists. This again raises the question of how blind composers were working with copyists or amanuenses to write down their composition.

In Spain, several blind musicians notably marked the Renaissance period. One of them is the vihuelist and composer, Miguel de Fuenllana, blind from birth, who became famous for a musical manual titled *Orphenica lyra* (or *Libro de música para vihuela intitulado Orphenica lyra*, or in English, *Music book for vihuela entitled Orphenica lyra*) divided into six books containing scores and tablatures for vihuela and guitar, and lyrics. Approximately one third of the works are original compositions (Griffiths, 2001).



Figure 6 - Organ Tablature

Source: Arnolt Schlick, *Tabulaturen etlicher lobgesang* - p. 9

The work was first issued by Prince Philip II of Spain in Seville in 1553, and publicly printed in 1554. We know very little of Fuenllana's birth (perhaps around 1530) and education. He held several court appointments in Spain and in Portugal. His daughter Doña Catalina de Fuenllana claimed that his father served Philip II and Philip III for more than 46 years, thus we can assume that he died around 1600. Regarding his book, the same issue as previous blind musical authors occurred: since he was blind and relied

on transcribers, there are several versions of the manuscript that slightly differ from each other, and it is not possible to know which one of these manuscripts came first.

From the three previous examples, a question arises about the originality and the legitimacy of the texts, and scores published and attributed to a blind composer. How did assistants learn to work under dictation? What was the proofreading process before publication? How many people were involved in copying the scores? Were there students who were taught these works? In the case of Fuenllana, was his daughter also his copyist? From the sources remaining today, we can only assume that the published result is a good representation of the original work. Moreover, since we have seen examples of composers who helped themselves and their students and collaborators with their own versions of phonetic tablatures, we can presume that similar techniques were used by Fuenllana, even if there is no trace of the way he was working.

With the emergence of new notation techniques to help assistants work better with blind composers, the teaching methods for music theory also evolved. Maria Theresia von Paradis (or Paradies) (Figure 7), one of the rare documented women in my historical research,¹² was born in Vienna, Austria, in 1759 and died in Vienna in 1824.¹³ The daughter of the Imperial Secretary and Court Councillor to Empress Maria Theresa, she was an Austrian composer, pianist, organist and singer. She lost her sight as a child before her fifth birthday, from unknown causes (Angermüller et al., 2001). Paradis' musical education was diverse and complete. She studied singing with Vincenzo Righini,

¹² I did not find more than three women in my research, all of them being blind. The way they were integrated into their societies were aligned with what men composers and musicians experienced, which led to either their disability or their talent being hidden, but with an extra layer due to their gender.

¹³ With thanks to the musicologist Stefan Sunandan Honisch for sharing multiple resources about Maria Theresia von Paradis with me.

piano with Leopold Kozeluch, dramatic composition with Antonio Salieri, theory and composition with Abbé Vogler and advanced theory with Carl Friberth, all famous characters of their time.



Figure 7 - Maria Theresia Paradis

*Drawing by Faustine Parmantié, 1784 -
Source: Österreichische Nationalbibliothek (ÖNB)*

She started performing in 1775 as a singer and a pianist in Viennese concert rooms and salons, and then she traveled in Europe to perform in numerous places including the Concert Spirituel in Paris, the palace of the Prince of Wales (Carlton House) in London, multiple venues in Berlin and Prague. She also showcased her own compositions, which consisted of solo piano pieces and works for voice and keyboard. When composing, Paradis used a composition board invented by Johann Riedinger, and for correspondence a hand printing machine constructed by Wolfgang von Kempelen. She stopped

performing to dedicate her time to composition in 1789 and was also teaching piano. She founded her music school in 1808, dedicated to young girls, who were taught piano, singing and theory (Keller, 2024, 284).

During her lifetime, she was dedicated an organ concerto by Salieri (Concerto for Organ and Orchestra in C Major, 1773), a piano concerto by Mozart (Piano Concerto no. 18 in B-flat major, K456, 1784) (Ullrich, 1946, 230), and probably a piano concerto by Haydn (his piano concerto in G major, Hob. XVIII:4, composed around 1770, published in 1784, and performed by Paradis at the Concert Spirituel in Paris the same year), although the dedication was not found (Lock, 2010).

Paradis' composition board

During a conference titled *Reframing the Gaze: Maria Theresia Paradis, Blind Musicians, and Musical Culture before and after Braille, a Bicentenary Symposium*, held on November 22 and 23, 2024, at Mount Holyoke College, South Hadley, Massachusetts, in the United States, an exhibition presented objects and scores belonging to Paradis, among which a three-dimensional replica of her composing board built in 2024 by the Fimbel Maker and Innovation Lab at Mount Holyoke College, based on Johann Riedinger's instructions. The object was presented with the following text:¹⁴

“The highlight of our exhibition is a modern replica of the composing board invented for Paradis by her longtime friend, assistant, and collaborator, Johann Riedinger. Riedinger published a detailed description of the composing board in the *Allgemeine musikalische Zeitung* in 1810, along with an engraved illustration of the board and the set of pegs of various shapes representing notes, rests, accidentals, articulation markings, ornaments, clefs, and bar lines. In a true labor of love, Riedinger commissioned carpenters to make the tables, and wood turners

¹⁴ With thanks to Adeline Mueller, one of the co-organizers of the conference, who authorized me to reproduce the text and sent me complementary material.

to make the note-value pegs, while he himself fashioned the wire ledger and bar lines and carved all the other pegs himself. Paradis used this composing board to notate her sketches, before passing it along to a copyist to note down on music paper, and she also apparently used it to learn new pieces. The composing board survives and is currently held in the musical instruments collection at the Kunsthistorisches Museum in Vienna.

In another example of the “curb-cut effect,”¹⁵ Riedinger asserted that his composition board had advantages for sighted as well as blind users, citing two high-profile testimonials:

this manner of composing music is such that sighted people could also use it to their advantage [...] and not only the court Kapellmeister Salieri admitted, but also Blessed Haydn assured, that this kind of score is much easier to scan and modify than in ordinary writing, and that it also offers much convenience when studying four-part music.

(...) Visitors are welcome to identify the familiar D-major tune-which was composed by a famous contemporary of Paradis, in a piece that premiered the year of her death¹⁶ – that we have set in order to demonstrate the notation system. Or you may try composing your own melody on the lower staff. We have included a selection of pegs in three sorting bins behind the composing board; they are labeled in print and in Braille.”

Figure 8 shows the composition board.¹⁷

In an article recently published in *Eighteenth Century Music* (2025), Adeline Mueller presents the composition board and its specificities, comparing it to other similar tools of the time, and looking at music notation systems for the blind across the years. She portrays Paradis as a “lifelong innovator and early adopter of new technologies and tools for blind communication and learning, within and beyond music” (Mueller, 2025,

¹⁵ The “curb cut effect” is the phenomenon where design choices intended for people with disabilities benefit a much wider population. It refers to how features like sidewalk curb cuts, initially designed for wheelchair users, are now used by parents with strollers, travelers with luggage, and people pushing carts. This effect highlights how inclusive, accessible design improves the user experience for everyone.

¹⁶ The board was originally showing the “Ode to Joy” theme from the last movement of Beethoven’s Symphony No. 9.

¹⁷ With thanks to the musicologist Rena Roussin who took the photograph and presented a paper at the conference.

8), corresponding with the experts of the time such as Valentin Haüy, who founded the first school for the blind in Paris. The composition board was probably used as a pedagogical tool for music theory at the piano school for women that Paradis opened in 1808 at her home.



Figure 8 - Maria Theresia Paradis' composition board

Private picture by Rena Roussin, 2024. Used with permission

Louis Braille (Figure 9) was another important musician and music theorist who dedicated his life to improve music notation and created a notation system for blind musicians which is still in use today. He was a French Romantic cellist and organist, born in 1809, who died in 1852, blinded by accident in his childhood. He integrated the Royal Institute for the Young Blind in Paris in 1819, at the age of 10. At the school, reading and

writing was done with the system introduced by Valentin Haüy, the founder of the Institute in 1785: raised black letters (the name given to the printed script used by sighted people). However, they are very difficult to read by touch and cannot be used for writing. Nevertheless, he became one of the best students at the Institute, being awarded multiple prizes for his efforts and accomplishments (Musée Louis Braille, 2025).



Figure 9 - Bust of Louis Braille

Bust by François Jouffroy - 1853 -

Picture: House of Louis Braille, Coupvray, 2009

Since Louis Braille was also a gifted musician, playing cello and the organ, he tried to adopt alternative ways of learning to read and write. He successfully created a complete alphabet, including punctuation marks, mathematical numbers and symbols (Watson, 2013; Musée Louis Braille, 2025). While he was developing and perfecting his new system, the Institute offered him a position as a teacher when he was only 17. He taught

grammar, mathematics, history, geography, and music, for which he developed his music notation system at the age of 19. He was a professor there until his death in 1852 at the age of 43, after a battle with tuberculosis. He passed away at the Institute.

Braille did not live to see the general acceptance of the principles of his system. His method was not officially adopted at the Paris Institution until about the time of his death, after which its adoption in Europe and America followed rapidly. He was buried in 1852 in his birth town of Coupvray, in Seine-et-Marne close to Paris. In 1952, marking the centenary of his death, the French government decided to grant him the posthumous honour to be transferred to the Panthéon.

Despite the success of Braille's method in the Institute, since decision-making was governed by sighted people (who preferred a more traditional black letter system), it took another 20 years before Louis Braille's alphabet was used, even though it was already relatively successful. Today, the Braille system is universal and available in almost every language in the world. It is currently used by six million blind people around the world. Being a perfectly binary system, it also handles digital conversion, enabling it to be increasingly read and written on digital media (computers, tablets, etc.).

Braille musical notation, or Braille music

VALUE	C	D	E	F	G	A	B	REST
Eighth NOTE								
QUARTER NOTE								
HALF NOTE								
WHOLE NOTE OR SIXTEENTH NOTE								

Figure 10 - Excerpt of the Braille Music Chart

Source: National Federation of the Blind (nfb.org), Baltimore, United States

Braille uses a series of raised characters, or “cells,” made up of six raised dots arranged in a rectangle containing two columns of three dots each. The pattern arrangements correspond to letters of the written alphabet, and each cell is read using the fingers, by moving fingertips from left to right across the lines of dots. For his musical notation (see Figure 10), Braille reduced the cell to two columns of three dots. The dots are numbered in two columns, counting downwards: 1–2–3 on the left, 4–5–6 on the right. In order to differentiate the note itself from the other musical elements, the four upper dots are used for the note name, and the two lower ones for the note value. Depending on the number of hands you need to play the instrument, the score in Braille music will indicate combinations of patterns.



Figure 11 - How do blind people read music?

Source: Ignasi Cambra, #BlindThings nº 2 - A little bit about Braille
2019 – Used with permission

For example, for the piano, there will be two grouped six-cell patterns for the left hand, and the same for the right hand. In addition, in front of the notes, there are indications of the pitch, meaning which octave the note is supposed to be played; however, in order to reduce the signs to a minimum, it is unnecessary to restate the pitch for melodic steps of a 2nd or 3rd; for 4th and 5th only when the melodic leaps are into adjacent octaves; while skips of 6ths and wider leaps always necessitate fresh pitch signs. The time signature is also given, along with fingerings, dynamics and accents, each representing a sign, which makes the process slow to read. It is a completely linear way of writing music. Thus, the score needs to be rearranged in blocks so that each block includes two or three measures of passages, and then the reader proceeds block by blocks until the end of the score (Gotwals, 2001; Watson, 2013; Cambra, 2019).

Figure 11 gives an example of a passage of Wolfgang Amadeus Mozart's Piano Sonata No. 16 in C major, K. 545, in both printed notes and Braille music. This is an

excerpt of a Braille music tutorial given by the Spanish pianist Ignasi Cambra on YouTube.

This system has of course improved accessibility to music to blind musicians. However, it can take a long time to study a very complex score, and these are limited to traditional Western Art Music notation systems. It is interesting to see how musical scores have evolved since the 20th century. How do we convert a graphical score into Braille music, for instance? These sorts of questions have been numerous in conversations among Braille music specialists, imagining contemporary notations with diagrams, or even spoken form (Watson, 2013).

The Al Nour Wal Amal Music Institute, an orchestra and music school in Cairo, offers a good example of the application of Braille Music in a contemporary context. I interviewed Amal Fikry, a member of the board of directors of their Chamber Orchestra (see Figure 12). In 1954, a group of women working for the Egyptian Red Crescent decided to open a School for Blind Girls called Al Nour Wal Amal, which means Light and Hope. At that time, it was the first organization in Egypt and in the Middle East for the education, rehabilitation, care, and integration in the society of blind girls and women. The early Al Nour Wal Amal Association had three sections: the school, the educational training sections, and a dorm for the girls who would spend the night at the association.

In 1961, Mrs. Istiklal Radi and a group of dedicated women started a music program with the help of Dr. Samha El Kholy, who had just arrived from England after obtaining a PhD in music. The ensemble of musicians emerging from the program were founding members of the Al Nour Wal Amal Music Institute, one of the rare music schools in the

world where all scores were written in Braille Music. Music education became part of the regular education curriculum.



Figure 12 - Al Nour Wal Amal Chamber Orchestra

*Source: Al Nour Wal Amal Chamber Orchestra -
<https://alnourwalamalorchestra.com/>*

The program itself was built with the idea of openness and integration, aligned with principles of the social model in CDS. Students lived in the building of the association, went to school in the morning and had their music lessons in the afternoon, until they had their high school certificate, which was delivered by the government, and their high school certificate of music, delivered by the Institute.

After 10 years, the group contained 15 young musicians who played as a professional orchestra. The first concert outside the premises of the association was at the old Cairo Opera House in 1971. In the following years, the number of musician students reached more than 30 musicians. Amal Fikry, who has been a member of the Board of Directors since 1971, organized their first international concert in Austria in 1988, at the

Hall of the Vienna Rathaus, with the presence of the President of Austria, Chancellor Franz Vranitzky. Between 1988 and 2017, the Chamber Orchestra visited and performed on 5 continents and 26 countries.

At the time of the interview with Amal Fikry, the institute counted 100 blind girls and women musicians, from 15 to 55 years, with different levels of music education. The large orchestra is composed of 50 musicians, the junior orchestra of 33 musicians, and the primary school children orchestra is composed of 20 children. The staff is composed of 20 teachers, tutors, and professors who teach individual instruments and sectionals.

I asked Amal Fikry about the learning process, especially when the women have to prepare a full program of Western Art Music and traditional music from the Middle East. With the idea of sharing heritage and culture from the two worlds onstage, they only play with Western instruments, but they play both musical styles. Like traditional Western music ensembles, Al Nour Wal Amal Chamber Orchestra has four sections: strings, woodwind, brass and percussion. They learn to play their music parts separately and they train twice a week as a chamber orchestra. Here is how they proceed:

First, of course, every musician has to learn the piece of music she has to perform. So each woman studies with their teacher at the beginning, until they know the part, and then they practice on their own. They study the piece by reading the notes in Braille by themselves. After a while, somebody [a teacher or a tutor assigned to this task] is reading the music in Braille while they are performing, to check their progress. After that, they play together as a group of instruments, while somebody follows with the Braille music to control the progress. Every instrument plays together as a group, and twice a week, all the instruments play together as an orchestra. And this is the most difficult part because the maestro has to organize, who has to come in, who has to get out, who has to play louder, who has to play softer. And this is all the work done during the rehearsal of the concert. And that's how they can continue to remember the small details of the music.¹⁸

¹⁸ This and all subsequent direct quotes by Amal Fikry are taken from our interview conducted over Zoom on June 17, 2021.

The expertise of Braille music is needed in both scores production and the learning process of the musicians:

For the music, we have a dedicated team for the Braille scores. A sighted person is reading the notes from the book. We have a few blind girls who know how to write and read the notes in Braille. Somebody is dictating to them the music notes, and they write the music in Braille. Then they copy the Braille scores and give each girl who has the same instrument the piece she's going to perform. Each girl has her own score written in Braille to be able to study her own piece. When they study, they can work with our musicians who can write and read Braille. It is a lot of work.

This interview was made during the pandemic, when all activities were on hold. Today, no new concert is announced on their website. I do not know if the school is still active.

In addition to Braille Music, new technologies have improved the process of learning scores for blind musicians. I interviewed a blind pianist called Michael¹⁹ who has been using a variety of methods and tools for quite a long time, following their evolution and adapting them to his needs. He explains how computer programs have been helpful but are far from perfect:

In the last 10-12 years of my life, I have been using this system with computer software. I have to convert the music from the piano music book, the physical form, to electronic form. If I don't already have it in the computerized format (...), I hire somebody to type it in. Once the notes are in the software, I can access the individual notes and rhythms through the computer speaking the information out loud to me. If I am on, say, the first note of the piece and I press the right arrow, that moved me to the second note of the piece. While it does that it speaks out loud to me the pitch and the rhythm, and where it is in the measure, and any other indications the composer wrote on top of the note. It makes a little joyful computer sound simulating the sound of a piano playing the note... it doesn't even sound anything like a piano (*laugh*). It is very painstaking to hear each note and hear the computer recite the information. For example, if the note is the A that orchestra tunes to, it is called A4, so it will say "quarter note, A4, beat two". (...)

¹⁹ Last name withheld by request.

The equivalent would be for you to memorize a paragraph of sentences by hearing each letter one at the time.²⁰

Michael does not need any adaptation to play his piano, but he needs to have improved tools to be able to learn new music and practice his scores efficiently. He has been doing his own research and asked for the assistance of a few scholars in various universities to develop a concept of printing excerpts of scores in a bigger format, with materials that are pleasant to touch. He would also benefit from methods that allow him to transform his paper scores into digital format, and to interpret the notes in a better way. Although technology is evolving, research and work in this specific area remain ongoing.

The evolution of medicine itself in finding cures for rare eye conditions also affected the lives and careers of blind musicians. Before medicine reached a trustable level for blind people to have successful surgeries, Maria Theresia von Paradis attempted to cure her blindness. Between 1777 and 1778, the German physician Franz Anton Mesmer developed a method which improved her condition. He called this technique “animal magnetism,” later referred to as mesmerism, and today known as hypnotism – it was actually a derived technique from mesmerism (Gregory, 1884, 2). However, it had undesirable side effects for Paradis:

Using only his hands and a wand, Mesmer was able to restore her eyesight through “animal magnetism.” But Paradis’s new-found sight disoriented her at the keyboard, where she now made mistakes and lost her place even in simple pieces. She became depressed and yearned for her former blindness. The whole episode brought forward both the seeming power of Mesmer’s methods and their strange overlap, even interference, with musical activity, for in an earlier case, he had permanently restored the sight of a girl who did not have Paradis’s musical abilities. (Pesic, 2022, 197)

²⁰ This direct quote by Michael is taken from our interview conducted over Zoom on October 20, 2020.

Paradis' experience with Mesmer shows the emergence of a quarrel between two spheres which are still opposed in the disability community today: the medical and the social worlds. Already known among popular musicians of the time, she allowed Mesmer to "cure" her blindness. The treatment partially worked since she was able to see shapes after it – the treatment itself and the results claimed are arguable but out of the scope of this dissertation. However, the effect on her musicianship was disastrous: she lost her focus on sound at the keyboard and her sensory experience of touch without sight. She realized that being a good musician was more important than seeing, and that if the cure to her blindness would bring her a new sight experience, even slightly, it would not replace the essence of her life, which was to play music. Today, we find similar narratives in cases of deaf people receiving a cochlear implant in order to "cure deafness" discussed earlier in this dissertation.

A case of "blindness cure" can be found in the story of John Purkis, an organist and music educator born in London in 1781, who died in London in 1849. He was blind from early childhood due to cataract in both eyes from birth. He became a talented organist and organ builder after he was given musical instruction by Thomas Grenville, a blind organist teaching at the London Foundling Hospital. When he reached 30, in 1811, Purkis underwent several eyes surgeries to try to regain some vision. The surgeries were successful, he was able to distinguish shapes, travel without accompaniment, and even use spectacles which were helpful in some circumstances. The story of Maria Theresia von Paradis was still known at this time, it was thus expected that obtaining sight might reduce his musical abilities, but it never happened. Purkis remained a talented musician.

However, he still needed an amanuensis to publish his works, and as a result he did not publish much.

Comparing Paradis' and Purkins' situations as regards to medical treatments is interesting, yet very different. There was no surgery involved in Paradis' treatments, although she was able to regain some vision, which disappeared after she stopped working with Mesmer. The oculist science was not sufficiently developed during Paradis' time to propose other solutions. Moreover, Paradis valued her musicianship more than her sight. In the case of Purkins, since medicine had increasingly evolved at the time he was proposed this intervention, he underwent a successful surgery by a famous oculist from his cataracts at the age of 30. This surgery was done in several parts: the right eye was operated on in June 1810, the left eye in August of the same year, and a last operation was made in September to finalize the process. Each procedure required bandages for one month and some rest to allow sight adjustments. These adjustments are described in Sainsbury's biographical notice. It is the first documented account of a successful operation on a blind musician. An excerpt is reproduced here:

After a lapse of a month from the first operation, he was able to leave off the bandages, and to indulge in all the effects light afforded him in this premature state of his vision, which evidently was progressively improving. At this period, the appearance to him of the foot pavement of the streets (to use his own expression) was white as snow. (...) At the expiration of two months after the operation, it was evident that he began to notice objects at a distance. (...) Some few days after the third operation he was taken out, and, when the bandages were removed, it was found that his vision was considerable, as he could distinctly discern objects at two or three hundred yards distance, and was very much delighted with the views of the surrounding country and objects. (Sainsbury, 1824, 324)

For almost 40 years following these operations, Purkis was able to see. We do not know if his sight remained steady for the rest of his life, but we can imagine that the

combination of the skills he acquired as a blind man during his first 30 years and what he discovered with his regained sight must have contributed to the quality of the instruments he built and played during his career.

These two examples show cases of cures before modern medicine considered imperfect bodies and increasingly excluded people with disabilities from society. Nowadays, treatments for eye conditions are more advanced. If they did improve lives of many blind individuals, blind musicians remain overly absent from the music scene.

2.3. Deaf musicians: integration and adaptations

As discussed earlier, deafness and music are often considered as incompatible because of the idea that music can only be experienced with auditory cues. Thus, deaf musicians were mostly excluded from music related topics until recently. It does not mean that deaf people did not learn to play music. Documented evidence of deaf musicians was rare and applied to people who lost their hearing later in life, but cases of contemporary Deaf musicians exist. This section presents several musicians who experienced hearing loss or deafness and shows what kind of adaptations they used to pursue a career in music.

In Western Art music, the first documented deaf musician was Johann Mattheson (Figure 13), a German composer, singer, writer, lexicographer, diplomat and music theorist from the late Baroque period, born Hamburg in 1681 and deceased in Hamburg in 1764. He received his musical training in Hamburg at the Johanneum, learning multiple instruments. He became a renowned tenor and conducted rehearsals at the Hamburg opera. A friend of Handel, he wrote and performed operas. He sang the leading roles in Handel's *Almira and Nero* at Hamburg in 1705, the final year of Mattheson's

career with the theatre. In 1715 he became music director of Hamburg Cathedral, leading the choir for 15 years, the first 10 years of which he regularly sang solos, and he composed many oratorios. In 1728, at the age of 47, he was forced to resign from his position, primarily as the result of increasing deafness – in his own words: “because of a noticeable weakness of hearing, as well as in consideration of some disagreements among the singers”²¹ (Mattheson, 1740, 211); he was completely deaf by 1735.



Figure 13 - Johann Mattheson

*Drawing by Johann Jacob Haid after Johann Salomon Wahl, 1746 -
Source: BnF Gallica Digital Library - digital ID btv1b8422451x*

Since he was retired from the public musical life, he dedicated the rest of his time to writing and composition, worked on translations from English books and articles, and

²¹ My own translation from the original German text.

published articles in several journals, along with his duties as a diplomat. He died in 1764 at the age of 83. Mattheson could live a comfortable life even after his deafness became noticeable, since he had more than one string to his bow. In music, he could continue to compose without the constraints of a music director position. In business affairs, since he was bilingual (German and English), he could continue to work in writing. He composed and wrote for the rest of his life, being completely deaf for 29 years. How he adapted his day-to-day lifestyle is not told, but we know he lived a quiet life and preferred to remain hidden from public society.

A similar narrative related to increasing deafness leading to seclusion can be found in the life of the English composer, organist and editor William Boyce (Figure 14), who was born in 1711 in London and who died in 1779 in London. He started his musical training in 1719 at St Paul's Cathedral in London as a chorister and an organist and focused on organ only after his voice broke. He was taught organ by Maurice Greene, an influential musician of this period, who became his mentor, and later his friend. His first professional position as an organist was in 1734. He also developed his activities as a composer and teacher. Little was known at the time of the hearing issues which were troubling him in 1736, and which he was able to overcome to complete his studies with Greene. He was appointed composer of the Chapel Royal in 1736. He lived his first major success as a composer in 1742 with *Solomon*, a serenata for two solo voices, chorus and orchestra. In 1749 he became organist at All-Hallows-the-Less and Great. In 1755, he was given the position of Master of the King's Musick, and in 1758, the posts of organist at the Chapel Royal.



Figure 14 - William Boyce holding the Solomon score

*Painting by Thomas Hudson, ca. 1745 -
Source: Bodleian Library, University of Oxford*

The same year, his hearing started to decrease; he was afflicted by poor hearing since his twenties, which turned into partial deafness. Criticism of his lack of accuracy began to raise at All-Hallows, however he was still able to attend to his activities until 1764 when he was dismissed. A similar fate awaited him at St Michael's where he was able to work until 1768, when he received a formal complaint from the churchwardens. Boyce resigned by himself. Between 1760 and 1762, he worked on a three-volume edition assembling famous hymns and anthems of the time, which is still known today, titled *Cathedral Music*. His final years were spent composing, writing, and teaching the younger generation of English musicians. He mostly lived hidden from his peers except for his friends and students (Bruce & Bartlett, 2001).

From these two cases, we can deduce a few elements. Musicians who are known to have experienced deafness faced hearing issues later in life. For understandable reasons, there is no trace of professional musicians who were deaf early in life, which would have prevented any form of music education. Musicians who disclosed their deafness did it as late as possible, when it became noticeable, and when they were already well-established musicians, composers or music directors. Even completely deaf, they could still live from their compositions without facing the lack of possible communication with society. They lived secluded, having as little communication as possible. What is not documented is how they were communicating. We can only assume that all exchanges were done in writing for those who were addressing them, and orally for the deaf person, but these were not the only existing communication techniques.

One cannot forget, among the list of deaf musicians from the Classical period, the name of the pianist and composer Ludwig van Beethoven, born in Bonn, Germany, in 1770, and who died in Vienna, Austria, in 1827. Beethoven had to find ways to adapt his musical practices to a progressive hearing loss, having to rely on written communication but also trying a variety of tools such as the first hearing aids (ear trumpets) and vibrating extensions of his instruments. As in the previous two examples, his hearing impairments isolated him from the rest of the society. Due to a lack of complete understanding of the level of hearing loss which affected the composer in different periods of his life, a misconception was to think that he was “completely deaf.” Beethoven first experienced hearing loss earlier than the two previous cases. Tinnitus (ringing in the ears) started at the age of 25, and his hearing loss progressed until he was profoundly deaf at the end of

his life, which meant that he was still slightly hearing but not enough for his brain to process the sound in an understandable way.



Figure 15 - Beethoven's ear trumpets created by Johann Nepomuk Maelzel

Source: Private picture by the author, Beethoven-Haus, 2021

In 1813, Beethoven met Johann Nepomuk Maelzel (later known for his famous Metronome). Maelzel was the inventor of a mechanical musical instrument called the “Panharmonicon,” that was used in December 1813 to perform Beethoven’s “Wellington's Victory, or the Battle of Vitoria” (original title: “Wellingtons Sieg oder die Schlacht bei Vittoria”), op. 91, also nicknamed the “Battle Symphony.” The collaboration between the two men went further. That year, Maelzel built a number of ear trumpets for Beethoven. Four of them are currently kept in the Beethoven-Haus, the birth house of the composer in Bonn (Figure 15 shows two of them in their storage box), and one is in possession of the Gesellschaft der Musikfreunde (Society of Music-Lovers) in Vienna. By the end of 1814, his hearing had deteriorated so much that he stopped using them in

favour of writing. Effectively, we do not know if he used them much since the trumpets themselves were not the most practical tools.

The Beethoven-Haus produced identical copies so that researchers can try them. I was lucky enough to have access to them in the summer of 2021, while I was working in the archives. The way an ear trumpet functions is quite simple: one extremity of the trumpet (the smallest part) is placed in the ear, and the interlocutor must speak in the receptor placed at the other extremity (the largest part). The sound is then carried to the ear through the tube. It works quite well, especially with the bigger models, the weight is quite light, but they are too big to be practical. The smaller ones must have been convenient for group conversations, although it works well in a quiet environment but not so much in a noisy salon, since the trumpet has to be directed to the source of sound; it forces the user to constantly turn around and search for the person who talks. Two of the ear trumpets kept in Bonn have metallic headbands to allow to use them hands-free, however, I doubt that it worked well – or maybe it did for the smaller ear trumpet. I attempted to place the bigger version on my head and to move without holding it, it would not stay in place and would constantly fall. It was interesting to examine them, especially since I also have a hearing impairment. Another scholar who tried them at the Beethoven-Haus and wrote about his experience is Robin Wallace, in *Hearing Beethoven* (2018). We have similar accounts.

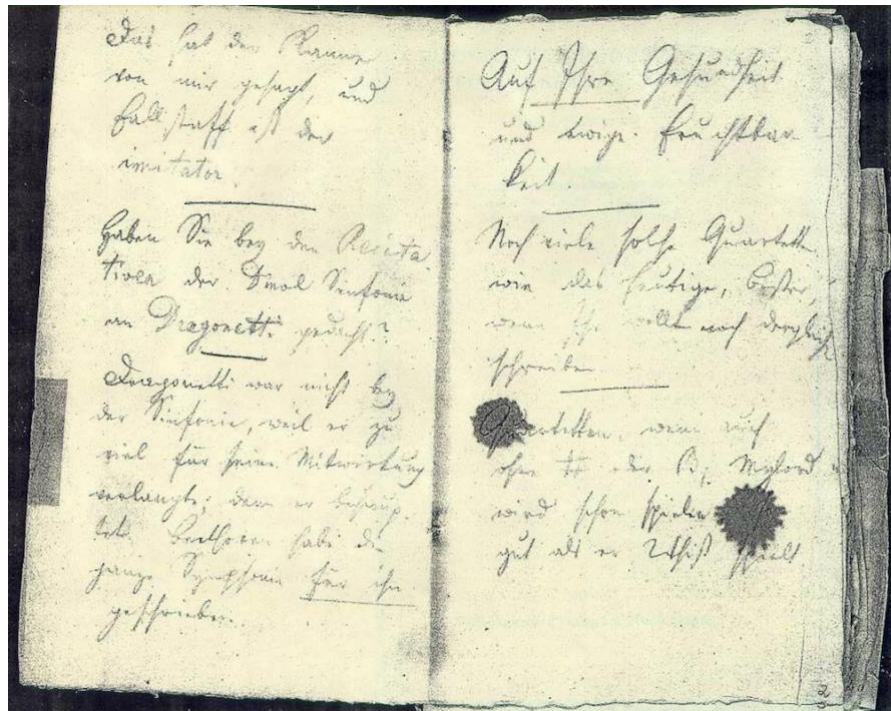


Figure 16 - Two pages of one of Beethoven's conversation books

Source: Berlin State Library

When hearing aids became useless because of his progressing hearing loss, Beethoven had to rely entirely on written communication. From 1818 to his death in 1827, he used little notebooks that we call today his Conversation Books. They were filled with diverse conversations and, among other topics, contained shopping lists, apartments and products adverts from newspapers, musical and literary ideas, and thoughts on a variety of subjects. Crucial for scholars, it gives precise hints on what Beethoven's life looked like and with whom he conversed. Of course, we only have half of the conversation since Beethoven was, most of the time, replying orally, and rarely writing down his answers, but some conversation flows can be easily followed by the replies from the writer.

In total, 139 booklets have been kept (thus saved) by his secretary and first biographer Anton Schindler after Beethoven's death, although he transformed and altered some of them (Stadlen, 1977). In 1846, Schindler sold all the conversation books in his possession to the Berlin Royal Library, now the Berlin State Library – Prussian Cultural Heritage, where they still are, after having survived two world wars and many events that could have led to their disappearance. Until recently, there was no English translation of the Conversation Books. Theodore Albrecht, Professor of Musicology at Kent State University, Ohio, has undertaken this important task. The first English translated version was published from 2018 and 2022, in twelve volumes.

A last interesting aspect of Beethoven's constant adaptations of his music practices was related to his desire to hear and feel his piano. In 1818, he received a gift of a six-octave grand piano from the Broadwood & Sons factory in London. The instrument left England in December 1817 and arrived in Vienna at the end of May 1818. The English mechanism of the Broadwood is quite different from the Viennese pianos, it is stronger and rounder (Beghin, 2020, 209-10). Beethoven seems to have immediately fallen in love with the instrument. But how? His hearing had dramatically decreased at this point; thus, it might have not been the sound that was attracting him. Or was it? This topic fascinated me. Robin Wallace, the author of *Hearing Beethoven* (2018), suggested that I contact Tom Beghin, a senior researcher at the Orpheus Institute in Ghent, Belgium, specializing in historic pianos. Beghin who was studying a copy of the Broadwood made by the piano maker Chris Maene. He was attempting to solve the mystery around a device Beethoven used on the top of his piano, known as the *Gehörmaschine* (hearing machine, also called “piano resonator”).

In summer 2021, the same year I tried the ear trumpets in Bonn, Beghin invited me to join him in Ghent for a week of seminars and masterclasses on various historical pianos, including the famous Broadwood.²² The week was entirely dedicated to the study of historical pianos. Our group consisted of researchers and performers from Europe and Canada. I presented my research about the impact of deafness on Beethoven's composition practices, which led to a fruitful conversation about deafness and music today.



Figure 17 - Tong Wang playing the copy of the Broadwood piano

The resonator is installed on the piano. Photo by the author.

Performers were offered masterclasses to try period instruments. A young pianist from Montreal, Tong Wang, chose the Broadwood. In order to feel the difference of touch and sound between a period and a contemporary piano, she first performed on a

²² I wrote an article about this experience in the French specialized journal *Beethoven* (2023, 44-51)

modern piano installed on stage for testing purposes. When she switched to the Broadwood, something did not fit. She described a distinction in the technique, the way her hands were pressing the keys, and a particular feeling that she could not define. As a result, the sound was not clear, it was too heavy, she could not find a proper balance between the touch and the sound.

The day before, during my presentation, I had put on the table the question of how deaf musicians adapt to what they perceive as sound, through vibrations or other elements. We came up with a hypothesis: what if, in order to find her sound, Wang had to put herself in a situation of deafness? Beghin handed her a pair of noise-reducing headphones. She began to play, and the sound was nothing like her first performance. Since she was no longer bothered by what she was hearing – note that she could still hear what she was playing, but as if the sound was coming from far away – she focused on the touch and vibration she felt. Later, she played with the piano resonator installed on the Broadwood (see Figure 17), this time with earplugs. In front of a rapt audience, she played the fugue from the fourth movement of the Sonata No. 31 Op. 110, which provoked intensive vibrations. Not only is the entire keyboard used, but this section features multiple changes of character, requiring dexterity and emotion from of the performer.

I asked for the permission to join her onstage. I also wore earplugs. First, I sat on the floor next to the piano, one hand on the wooden stage and the other on the frame of the instrument (see Figure 18). Then I sat next to her as she played, my head facing the piano resonator. My hands touched the wooden piano frame while Wang was playing. The sound was redirected toward us, and the vibration became part of the sensory

experience, as important as the sound. What I experienced is almost indescribable. It was as if the combination of sound and vibration blended with our bodies. Still today, I have vivid memories of this extraordinary experience, as if I had entered Beethoven's inner sensory experience of playing the piano with increased vibrations.



Figure 18 - Feeling the resonance of the piano resonator in Ghent

Photo: Camilla Köhnken. Used with permission.

These experiments are crucial since they allow scholars and musicians to understand more deeply what it meant to be a deaf performer during this period of inventions and adaptations, and what efforts it took to maintain a level of connection to the rest of the society, especially for very famous musicians. The best way to comprehend, even only for a short moment, what Beethoven might have experienced himself is to use the tools and techniques he adopted during his lifetime.



Figure 19 - Evelyn Glennie - "How to truly listen"

Source: TED Talk 2023

Assumptions about deafness, already discussed earlier, often lead to erroneous and conflictual ideas about sound and silence. But music can be “heard” differently in the sense that it can be felt through vibrations or interpreted visually.

Evelyn Glennie, a deaf percussionist from the UK, demonstrates this in her TED Talk entitled *How to truly listen* (Glennie, 2003) in which she describes her personal connection to music through percussion (see Figure 19). She started her musical education early in life but lost her hearing at the age of nine after a disease. She recalls the conversations with her teacher:

I remember when I was twelve years old and I started playing timpani and percussion, and my teacher said “Well, how are we going to do this? You know, music is about listening.” And I said “Yes, I agree with that. So, what’s the problem?” And he said: “Well, how are you going to hear this? How are you going to hear that?” I said: “Well, how do you hear it?” He said: “Well I think I hear it through here.” [Pointing her ears] And I said: “Well, I think I do too, but I

also hear it through my hands, through my arms, my cheekbones, my scalp, my tummy, my chest, my legs” and so on.²³

Glennie points out the fact that without this conversation with her teacher, the teacher might not have realized the importance of another way of hearing music by feeling it – feeling the vibrations – to compensate a lack of a sense – a lack of hearing. Here is how her teacher worked with her:

We began our lessons every single time, tuning drums, in particular, the kettle drums are timpani to such a narrow pitch interval. (...) It’s amazing that when you do open your body up and open your hand up to allow the vibration to come through, that in fact, the tiny, tiny difference can be felt with just the tiniest part of your finger there. What we would do is that I would put my hands on the wall of the music room, and together we would “listen” to the sounds of the instruments and really try to connect with those sounds, far, far more broadly than simply depending on the ear.²⁴

“Listening” to music differently aligns with my comment about adapting to a new condition, not “overcoming” disability. For me, adapting to a new condition in this way is following the social model, finding how to integrate mainstream music (society) by embracing vibrations as listening method. In my own interview with Evelyn Glennie, I asked her to describe her work as a solo percussionist in a big orchestra. It is a matter of communication, she answered, continuing that when the issues and suggestions are properly explained, stated, even written, then there is no problem. She shared how having a team working together to make sure everything is covered is crucial. She could not imagine the task of preparing a concert only by herself, there is communication within her team and with the orchestra:

We’ve always been very clear as regard to what is needed, so for example, how I set the instruments on stage, if I’m with an orchestra. Normally soloists will face

²³ Glennie, 2009: 7:42.

²⁴ Glennie, 2009: 8:16.

the front. (...) I had all of my instruments more or less to a 90-degree angle from the audience so that I could see the conductor and the conductor could see me. The conductor is always right at the edge of the stage rather than behind me. We must have eye contact. We created a stage plan, and we inform the orchestra that if there's any issue with that, they must let us know ahead of time.²⁵

Now that the “we” has been cleared and the preparation work has been completed, the musician can go back to “I” again and music can be performed. Glennie continues with her example of being hired by an orchestra, led by a conductor, and the importance of clarity on communication:

I think that it's very important for me to be clear with the conductor that everything instruction-wise is made very clear, so they can't be saying something while looking down at the score. Very often they might say: “Let's start from letter B,” or “Let's start from bar 129.” If it has been really clear, it's just simple things, but because we know that time is money, and I'm being hired as a musician, not as a deaf musician, therefore I have to function really smoothly, and provided that everything is made clear right from the beginning, that really helps. Otherwise, everybody gets in their comfort zone, and it's difficult for people to get out of that if they're asked to do something that's a bit more unusual, even if it's something quite simple.

Evelyn Glennie is profoundly deaf, meaning that she cannot process or understand the very few sounds she can “hear.” Her disability becomes visible only when listening is involved. Someone who sees her on stage for the first time will probably not notice that she is deaf. But someone trying to speak to her will realize, by visual interactions, that she will not react unless you face her, and she realizes you talk to her – that she does not hear. She reads lips perfectly, to the point that people wonder if she is really deaf. She has had to endure the issue multiple times, asking interlocutors to face her when they speak so that she can see their lips. She mentioned to me that lip reading, in reality, is body

²⁵ This and all subsequent direct quotes by Evelyn Glennie are taken from our interview conducted over Zoom on October 29, 2020.

reading. Facial expressions, but also the position of the body, gives her more information than the words on the lips. By adapting her position on the stage, she uses the principles of the social model consisting of readjusting the surroundings for the person to be seen as a person, not as a disabled person. In her case, she can assume the role of musician, which is who she is. However, this concept is limited in its inability to address audience assumptions of what she can hear and not hear, feel and not feel, do and not do. Thus, she continues to carry the weight of interpretation for her audience: she has to “prove” that she is a musician, not just a “deaf” musician.



Figure 20 - Paul Whittaker

DW Documentary, 2020

Source: YouTube - <https://youtu.be/8WowgLvtl00>

Another musician I interviewed told me how he adapted to a society in which hearing is predominant in music, and he had to develop his own techniques to learn and progress. Paul Whittaker (Figure 20), a classical pianist and organist living in the UK, was born Deaf. I asked him how he connected with his music instrument. He told me

about the difficulties of being a deaf music student. He grew up in a household full of music. During his childhood, the radio was always on, and his mother played the piano. From a very young age, he was attracted to this instrument. This attraction was based on the vibrations of the keys, the keyboard, and the frame, which was his way of “hearing” it. During our interview, he told me:

I feel that the piano is probably one of the best instruments to play as a deaf musician. You are playing a huge, big physical instrument with enormous pitch range. When you press a key down, you feel the hammer hitting the strings, the vibration travelling back into your arm, and every single note feels different.²⁶

But feeling is not enough. What Whittaker learned to do is to train his brain to associate a feeling, or a vibration, to a written note on the score:

You also very quickly work out that the note you see in that one stave is that one there on the piano. So, it’s easy to relate what you see to what you do. Also, as a pianist, you are used to reading two staves of music, both treble and bass. If you do a piano duet, you are sometimes reading four. Because my understanding of music is based entirely on what I see in the score, score reading is a very important skill. I was never taught to do it; it just seems to be something I can do.

When Whittaker was admitted in the music department of Wadham College, in Oxford, he had to face the assumptions of his teachers that being deaf meant a possible lack of communication. Fortunately, he found understanding tutors, willing to find the best possible way for them to work together:

One of the advantages of the Oxford system is that it is a tutorial system. I’ll always remember the time when I met my prospective tutor, when I went for an interview. Imagine, if you can, a fairly large man sitting behind a very large desk but looking very small, if that makes sense, because I don’t think he ever met a deaf person before. He was quite understandably a little bit nervous with me, not only a deaf person but one who was a musician hoping to spend three years reading music under his tutorage. This shows how keen he was, because, let’s face it, attitudes to disability back in the 80s were very different to what they are now.

²⁶ This and all subsequent direct quotes by Paul Whittaker are taken from our interview conducted over Zoom on November 17, 2020.

Whittaker highlights the fact that the way disability is seen today has evolved. It is still quite difficult, as a disabled musician, to enter a music academic institution and ask to become a student there, but because some students have already experienced this, it might be easier to find some inspiration from previous cases. As Whittaker told me, if you can demonstrate that you are willing to adapt to the current teaching opportunities, it might make your life easier.

However, in some cases, the teacher will assume that the student is not capable of adapting and might imagine their own adaptations. This is what happened to Whittaker, as he continued to tell the story of his journey as a student. The first time Paul met his tutor, they both had to agree how they will progress together:

He said “I was a bit worried about how to communicate with you. What I normally do is that I will sit here, and the student sits to the side. We would look at whatever harmony or counterpoint work you’ll be doing, and we’ll talk about it. So, what I have done...” and at this point he got up, walked to the other side of the room, and from behind his upright piano he got out this massive mirror. He had attached clamps to the bottom of it. He said: “I thought what we could do is that I sit here when you sit there, I’ll attach the mirror to the other side of the desk, and all we do is look up and down, and we can communicate with each other.” He was really disappointed when I said to him “I can lipread sidewise.” I felt a bit guilty in a way. He took the mirror and put it back behind the piano. But it was still there three years later when I left, and it was still there a few years after that when I went back to visit him. I think he treasured it as one of those great inventions to help deaf musicians. It was fantastic because he was interested in my ability, not my disability.

Though very useful, lipreading is not the solution to all problems, as Whittaker stated.

Yes, he “could” lipread. But the fact that the teacher was willing to improve his way to instruct to accommodate the situation shows the importance of teamwork and communication between student and teacher. They had to work together to allow both

their communication methods to become a common ground. The way Whittaker improved his skills as a musician had a lot to do with his capacity to reproduce what he could see. He explained to me that he would ask his teachers to show him what to play and then would copy their movements. He was always used to mentally associate a movement to a “sound” – or a representation of the sound through its vibration – so this movement became a reproduction of the sound itself. With both his perfect technique of score reading and the imitation technique, disability is not an obstacle anymore.

2.4. Physical disabilities: perceptions of body differences

The previous historical examples did not explore yet how musicians with physical disabilities found their place in society. Cures applied to blindness were presented, but there were no documented cases of physically disabled musicians before the emergence and evolution of medicine practices in the 19th century. Regarding people with physical malformations, scientists attempted to determine “normal” versus “abnormal” bodies according to standards medically and socially defined. Doctors wanted to demonstrate what was “wrong” with disabled people and how to “fix” them or to “save” them. Special institutions (institutions for the blind, institutions for the deaf) were created to train and educated people with disabilities. Highly developed in the 19th century and perduring in the 20th century, these institutions had for objective to keep people with disabilities together, hidden from the rest of the world, outside of “normal” establishments.

If disabled musicians highly regarded in the music field were used to be called “extraordinary” in a quite positive manner, as we have seen earlier in this dissertation, in the mid 19th century, one trend shaped the way physically disabled bodies were perceived by society: the “Freak shows,” particularly appreciated in the United States, and

popularized by Phineas Taylor (P. T.) Barnum. These shows consisted of exhibitions of what were called “oddities” of nature, people with different shapes and colours of bodies than those who were considered ordinary. Seen as “monstruous,” people with disabilities or people of colour were shown as extraordinary bodies, people with “exceptionalities” (Bogdan, 2014, 195).



Figure 21 - 1899 Poster "The Barnum & Bailey greatest show on earth"

Source: Library of Congress – LCCN Ref.: 95501056

With his exhibitions, P. T. Barnum monetized exaggerated differences. He presented two categories of people: “abnormal” Westerners (giants, dwarfs, conjoined twins, visibly physically disabled people – with deformities or missing limbs –, contortionists, fat people, thin people, hermaphrodites – one of the stars of the show was

a bearded woman) and tribal or exotic non-Westerners (Black people, Native American people, Chinese people) who could perform a specific act (Garland Thomson, 1997, 63). Moreover, they were stripped of their names and attributed nicknames that would attract visitors: a contortionist was “The Snake-Man;” a small person who liked military stories was renamed “General Tom Thumb;” a tall Chinese man became “The Chinese Giant;” two Hindu conjoined twins were categorized as the “Hindoo Enigma;” a teenage girl born with two sets of legs was known as “The Four-Legged Woman;” a man born without arms and legs was called “The Living Torso;” a very thin man was named “The Human Skeleton;” the famous woman with a beard was featured as “The Bearded Lady;” and so on. Many of these people were photographed by Charles Eisenmann, at the time when collecting pictures and visit cards as memorabilia was popular.

These photographs were published in 1979 by the photographer Michael Mitchell in his book *Monsters of the Gilded Age: The Photographs of Charles Eisenmann*. These portraits served as the basis for drawn posters (see an example in Figure 21) and press publications used by Barnum as publicity for the itinerary exhibition, which he deemed “The Greatest Show on Earth” (Kunhardt Jr. et al., 1995). In his biography, Barnum himself referred to his famous tent as “Barnum’s Great Museum, Menagerie, Circus and Traveling World’s Fair” (Barnum. 1879, 290). Programs and pamphlets accompanying the show contained medical proofs of authenticity. According to Garland Thomson:

Posters and broadsides extravagantly proclaimed the peculiarity of the freak’s body, provoking the spectators’ curiosity with taunts such as “What Is It?” that heightened the difference between the common observer and the marvelous body. If hyperbolic assertions such as “The Most Marvelous Creature Living” enhanced expectations, the crude illustrations on advertisements imaginatively distorted the freaks’ bodies into grotesque caricatures. An illustrated, printed narrative pamphlet almost always accompanied the actual exhibit, authenticating the freak with a “true life” story and medical testimonies that served as both advertisement

and souvenir, augmenting the pitchman's oral spiel. These souvenir narratives embellished the freak's exotic history, endorsed the exhibit's veracity, and described the freak's physical condition from a scientific or medical perspective, as titles like "History and Description of Abomah the African Amazon Giantess" and "Biography, Medical Description, and Songs of Miss Millie/Christine, the Two-Headed Nightingale" make clear. (Garland Thomson, 1997, 61)

Barnum, who was a businessman above all, created "fake freaks" when he needed new stars, like fake conjoined twins, or fake tattooed men; the fact that audience members had to judge whether these people were faking their oddities or were "authentic freaks" attracted even more people (Bogdan, 1988, 8). The press reviews presented the show either as scandalous or entertaining. If P. T. Barnum was the initiator of these shows, many succeeded him, until they became inappropriate for the public eye. Nonetheless, these exhibitions perdured until 1940.

Historically, in the nineteenth century, a disabled performer was a "wonder" that the audience would watch because they were disabled, not because of the artistic performance itself. Rosemarie Garland Thomson (1996) traces the history of "the gaze" in relation to disability, highlighting the importance of "freak shows" for disability representation on stage. From the middle of the 19th century to the beginning of the 20th century, disabled people were seen as wonderful creatures with extraordinary bodies and talents. Shildrick published a detailed work on the subject that bears the evocative title "Embodying the Monster" (2002), discussing how the audience's perception of monstrosity played a key role in the "freak" industry:

What the spectators actually believe of what they see and hear seems scarcely to matter. (...) The spectacle was often based on a fraud in that there might be little or nothing out of the ordinary with the body, or mental capacities, of the performer. (...) The label of freak relates not to a particular physiology, but to 'a way of thinking about and presenting people.' (Shildrick, 2002, 33)

Shildrick elaborates:

The point is that freak shows were productions which staged not 'real life' as such, but more or less meticulously contrived spectacles, which encouraged viewers to think and see in terms of various binary distinctions between 'them' and 'us'. (...) In creating such a distance, the display of abnormality served to normalise the viewing public at the same time as marking the performer as a deviant type. (...) The freak show made explicit links between cultural otherness and monstrous form. (Shildrick, 2002, 33)

This changed as medicine changed. From wonderful creatures, disabled people became horrible creatures with deformities. In the twentieth century, the medical model of disability transformed the way disabled people were seen in society, leading from acceptance and inclusion to rejection. With medical explanations, the artist seen as a "Divine" creature was not enough anymore to explain disability and difference. There was a need for science-based models, still present in medical models and in the binary distinction that society makes between disabled and abled. However, today, the gaze still seems to be present.

Garland Thomson explains it by describing staring as a common behaviour in human nature: "Staring is a way of strongly reacting to another; it bespeaks involvement. It is the human response to novelty, to the unexpected" (Garland Thomson, 2005, 2). She goes on by stating that "freak shows" were attractive to Americans who were hungry for extravagance, knowledge, and mastery, along with its simultaneous quest for self-apprehension (Garland Thomson, 1997, 58). I wonder what the audience was fearing. Did audience members want to stay away to avoid contact to prevent them from becoming disabled themselves? Were they considering disabled performers as animals? Although these shows are now considered as scandalous and inhumane, the change in the evolution

of medicine and the long period of “freak shows” have negatively impacted the way performers with disabilities have been perceived on stage, long after these shows stopped. For Joseph N. Straus in *Extraordinary measures* (2011), recognized talented musicians have extraordinary capacities. When young musicians show early talent, they are called “prodigies” and seen as unusual. Straus draws a parallel with “freak shows”:

Audiences pay to see and hear unusual figures whose appearance and ability deviate far from the norm. In exchange for the price of a ticket, audience members can stare (and listen intently), indulging in the simultaneously disquieting and reassuring contemplation of a human embodiment so like and yet unlike their own. (Straus, 2011, 125)

This is an interesting idea concept, to which we can relate even in the beginning of the 20th century, when “freak shows” were still existing. The body lacking a part has long been perceived as dysfunctional, implying the idea of impossibility, carried to this day with the medical model.

It has been challenged by disabled musicians. Paul Wittgenstein, the one-handed pianist whose career was analyzed by Blake Howe, presents a good example of “prodigious” artist from this period, intriguing the audience, probably with the remaining impacts of the “freak shows,” but also with the recognition of the quality of a good musician, disabled or not. The conflict between the medical and the social model stop when one works hand in hand with the other. For instance, prosthetics can now replace a missing limb, which allows a better integration of people with limb differences into the society. These adaptations allow disabled musicians to play an instrument they could not have played without prosthetics. Several accounts from the musicians I interviewed are given as examples hereafter.

The Canadian violinist Adrian Anantawan (see Figure 22) was born with a condition called Amniotic band syndrome (ABS), a rare congenital affection causing developmental issues of the fetus. He was born without a fully developed right arm. He has use of his elbow, but not his wrist and his hand, and he does not have articulating fingers. When he was in fifth grade, the teacher wanted all the students to start playing an instrument, as part of the standard curriculum. The instrument that they offered was the recorder, which did not really work for him, so he experimented with a few other instruments and their adaptations. He tried the trumpet, but he found it too loud. He tried the drums, but it did not really match his personality. His father being an amateur violinist, they tried the violin, which he was already accustomed too, and which he felt was creating a beautiful sound. His parents bought him a small violin, and they found a teacher. He describes his beginning as follows:

For the majority of the first few lessons, we didn't even use the bow. It was more just thinking about the left hand, my fully functioning arm, holding the violin, the posture, the left hand technique, and then using my other hand to just pluck the strings. And it seemed that I took to that relatively quickly.²⁷

He already worked with a team of prosthetists who built him a number of adaptations such as a myoelectric arm (a type of prosthetic arm that is controlled by the electrical signals produced by the muscles, detected by electrodes placed on the residual limb, are then used to power and control the movements of the prosthetic hand, wrist, and elbow) or a swimming arm, so they explored options for the holding of a bow:

We created something called a spatula, which is a cast that fits around my hand. It's held together by Velcro. And then the bow is attached to that spatula using an aluminum tube. So it was very simple materials. And the goal was just to hold the bow without necessarily using the fingers. And I think I was very lucky because I

²⁷ This and all subsequent direct quotes by Adrian Anantawan are taken from our interview conducted over Zoom on February 8, 2021.

was able to make a relatively good sound right away. It wasn't perfect, but just like any person growing up, you have to practice and refine your sounds. And that began a journey for me that has led me to continue playing the violin to this very day.

He quickly integrated a small chamber orchestra and made friends through music, with similar interests. One year before finishing high school, he auditioned for the Curtis Institute of Music in Philadelphia and got accepted. This is where he continued his music education. He was there for five years, including his last year of high school, and then went to Yale University in Connecticut to do his master's in performance, followed by Harvard University to specialize in education.



Figure 22 - Adrian Anantawan

Source: Curtis Institute of Music

After graduating from Harvard, he directed a program in Boston for about four years, based on a method called ELSA-STEM (Early Learning Science, Technology, Engineering, and Mathematics), a social music program that originated in Venezuela, and advocated for orchestra music education for young people. Then he moved to Milton

Academy, an independent school outside of Boston, where he taught music to K-12 classes, but he also created a program that serves youth with disabilities to be able to engage in professional education. He became the department chair of the music faculty.



Figure 23 - Molly Joyce and her toy organ

Photo by Shervin Lainez

Source: Molly Joyce - <https://www.mollyjoyce.com/>

The composer Molly Joyce started her musical journey with traditional Suzuki violin lessons at the age of five, as an extracurricular activity. At the age of seven she was involved in a serious car accident that almost led to the amputation of her left arm, and partially paralyzed her hand. After the accident, she wore a cast and she had multiple surgeries, but both her physical therapist and her mother encouraged her to consider a new musical instrument, with the help of her elementary school orchestra teacher. Together, they experimented with playing the cello backwards, bowing with the left hand and fingering with the right hand. She also tried to learn the trumpet, which was easier for

her to play with physically different hands but became frustrating as she could not hold too much weight with her left hand. She played in marching bands and pit bands in high school, but she felt that her level was not very good. She became attracted to music composition since she did not have to think about what her hands could or could not do. She felt like she could really let her mind and imagination run free again, without the constraint of physical limitations.

Once she graduated from high school, she stopped playing trumpet. She felt relieved not to engage as much with her hand. As an undergraduate student she played some keyboards. This is when she bought her toy organ on eBay, as a joke in her life. She learned how to compose on her computer, with the satisfaction of hearing what she just wrote. She took composition lessons that began with music theory and evolved in having feedback on her work. Once she started attending summer festivals for composition, she realized that there was a professional path with graduate studies, which encouraged her to apply to conservatories in addition to regular universities, to explore the multitude of possibilities. She also applied to Juilliard, which was a complicated process because she had to compete against people who were more experienced. She got offered a position.

In New York, she worked for one of her teachers, Missy Mazzoli, who was her mentor and role model. Joyce wanted to pursue her graduate degree outside the United States and studied in The Hague in the Netherlands after receiving a grant. She got approved for Yale University the same year she moved to The Hague, but she was able to defer Yale one year to study abroad. She discovered Critical Disability Studies (CDS) in Yale. She first took a course entitled *Music, Service, and Society* with Professor Sebastian Ruth, a MacArthur award winner who runs an organization called Community Music

Works in Providence. With this course she found an organic way to make her think about her musical practice within society, and read works by authors such as John Dewey, Grace Lee Boggs, and Maxine Greene. Even though this course was about political music or socially minded music, of which subjects she was doubtful, this course made her discover other perspectives:

To be honest, I used to be skeptical of political music or socially-minded music. I never wanted to really force it in a way. I thought of music as a very abstract thing. And so this course started getting me thinking about that. And it was when I was performing on the toy organ more and thinking about my body in relation to that. But I definitely was not identifying as disabled or doing any of the disability studies. And then fast forward to my last semester there, at the end of two years, I wanted to do an independent study. Sebastian accepted to be my advisor, and I knew I wanted to do something on disability or impairments. I feel like I was still dancing around the words in a way. But it quickly turned into a personal investigation of my own body, especially in relation to the organ.²⁸

Joyce read many articles about disability, music, the relationship to the body, language, and other related topics. Going through a rabbit hole became a life changing experience. With the understanding of CDS and the different models applied to her own disability, Joyce's music became physically motivated and informed by binaries: her compositions were about her hands being different from each other, the left and right part of her body feeling "opposite." She used titles such as "Body and Being," "Form and Flee," "Breaking and Entering," "Left and Right." Her reading opened to more interactions with CDS principles in her compositions, especially developing her musical thoughts about the social model of disability.

The toy organ became more than a tool, it took a central position in her practice. She started creating electronic tracks with it, which expanded its sound world. A picture

²⁸ This direct quote by Molly Joyce is taken from our interview conducted over Zoom on January 27, 2021.

of her playing her toy organ can be seen in Figure 23. The fact that her organ is made of chord buttons on the left-hand side, and the keyboard sits on the right-hand side, feels natural for her to perform and to display her disability in a very public way. The position of the keys on the toy organ allows her to “unhide” her disability since she uses her body and her arms to perform, each arm having one specific role on the keyboard. She sings while playing. She told me that her singing helps her to “find her own disability voice.” I understand this quote as finding the way to accept the entirety of her body, with her impaired hand as being part of her body, which influences how she composes. Before Yale, she had an issue with the fact that her image of disability was not one she could associate with: she was not using a wheelchair, her condition was not “disabling” enough. She used to say that she had a weaker left hand, and rarely talked about it.

Her work at Yale, especially after the independent study, made her recognize that she was disabled and that she wanted to reflect this in her music. It was happening in tandem. At the end of graduate school, she was reaching out to disabled activists and artists when she was traveling for residencies. She had a strong interest in learning more about their vision and their experiences, but she was still afraid to identify as a disabled artist. It changed when her collaborator Jerron Herman, a choreographer and dancer, asked her if she identified as disabled. She did not immediately reply but thought of it and decided to embrace this newly discovered identity more. An important meeting added a new perspective on her views on her disability and the way she could use them in her compositions. Joyce met Judith Heumann, an American disability rights activist known as the “Mother of the Disability Rights Movement” in the disability community. Heumann, called Judy by her friends and colleagues, was very involved in the 504 Sit-In

of 1977 mentioned earlier, delivering public speeches and organizing the movement until the negotiations to improve disability rights in the United States were successful. She worked as a teacher and was then hired by the government to continue her fight for better rights for people with disabilities. Speaking with her about some aspects of her work, Joyce realized something:

I was talking to her about my collaboration with a dancer, Jerron Herman. I was something like “we both have weaker left sides.” Then I realized what I said. Judy asked me: “Why do you say weak?” That question really struck me because I knew it was always a go-to term I would use, I think, to explain why I couldn’t lift something or if I wanted to get out of something or just to really describe my left hand. I don’t think she was saying necessarily to call it my strong left hand and deny my weakness altogether. But really, it made me think about what weakness can be, as such a central concept to the disabled experience, especially to individuals across a range of disabilities.²⁹

Her discussion with Heumann pushed her to start her project known today as *Perspective*. Joyce was a Halcyon Arts Lab fellow in Washington DC in 2019 and started exploring the social construction of weakness and the possible shifts from negative connotation of disability to positive experience. She learned from her colleagues in visual arts and dance, but also from projects that were involving participant interviews, which inspired her own approach of mixing dialogues and music. Her initial concept was to highlight the voices of disabled activists and important members of the disability community she was meeting in Washington DC, like Judy Heumann, but she realized how easily the network could be extended to include a variety of disability voices. She was surprised by the number of people who agreed to be interviewed. The questions she asked came almost naturally, especially after studying and reading a fair amount of CDS

²⁹ This and all subsequent direct quotes by Molly Joyce are taken from our interview conducted over Zoom on February 27, 2023.

literature. For instance, each participant was asked to give their own definitions of topics that are central in the life of someone with a disability, such as weakness, access, care, and interdependence, or some more controversial like control or cure. Joyce also proposed subjects tied to her own personal frustration, such as assumption. Interviewees had the choice to answer or not, and they could talk as much time as they wanted. The interviews were then edited and ordered in a way that made sense for the project, by topic:

If sometimes the interview response is related to each other, fed off one another, or if they didn't relate to each other, contradicted each other, I like to put that next to each other, too, to show the diversity of the disabled experience or viewpoints that we don't all think about the same way. And then I added the music. But I really had to focus on the responses first and then adding the music.

She composed music for each part, directly inspired by the replies, unless there was specific intention going along with the topic itself. This was not a simple task. When the project started, Joyce thought of the music as the most challenging part in the process, until her own music resonated with the topic. The process was different from composing with a music notation software based on her own understanding of the topic. It needed to correspond to what interviewees were saying. At first, she wrote very little music, she improvised on her toy organ, using long musical phrases written based on feelings and intuitions. She tried variations and combinations until she felt it was interesting and diverse enough in terms of tempo, rhythm, instruments, voice; it had to fit the topic. For instance, in the section about control, there is a constant drumbeat that becomes distorted at the end, as if illustrating a loss of control; or the section about cure presents oscillating major-minor chords which almost sound like a fantasy land, as if to show that cure is not reachable or slightly above. Moreover, she did not want to overshadow the voices. She

felt like the music was her own answer to the questions, hopefully adding support and reinforcing the statements of each interviewee.

The project progressed from 2021 to today. Joyce released an album called *Perspective*, under the independent label New Amsterdam, in October 2022. All the videos were made available on her YouTube channel. For each video, the captions of the interviews are shown on a black background, while we hear chosen excerpts along with the music. She also published all the transcripts of the interviews on her website, with the biographies of the participants of each iteration.³⁰ The final result can take multiple formats: an audiovisual setting with video projections, an audio installation with speakers arranged in a specific way to enhance the user experience, or even as an interactive performance with participation of the audience and live music. A version with dancers was also produced. Continuously growing, the project is now conducted outside North America at the time these lines are written. An iteration in German based on interviews with German disabled activists was installed in December 2023 and January 2024 for a public art exhibition in the streets and in public transportation corridors in Düsseldorf. As the project evolves, she thinks of the diverse improvements she can make, such as the integration of sign language to the videos, and translations in other languages. Her dream would be to propose an interactive website on which visitors could submit their own answers to the questions.

Molly Joyce's example of embracing the social model of disability in her compositions involved a constant questioning of her identity, as a musician and as a disabled person. Through her music, she created a link between individuals of the

³⁰ All interviews and evolutions of the *Perspective* project are available on Molly Joyce's website. See Joyce, 2025.

disability communities, with the aim of giving them back their voice in society, their seat at the table. What is shared within the diverse communities is that this world was not made and is not thought of with disability in mind. As a result, it is difficult to navigate, physically and emotionally. Over the years, the emotional impact of constantly having access denied and fighting for human rights and inclusion lead to a stronger voice, a common voice, that most frequently struggles to be heard.



Figure 24 - Blaine Harrison

Source: Lovebox Festival, London 2019, Express & Star

If many musicians and composers today build their careers around social model principles to be more integrated in society, the fight between medical and social model theories mentioned previously can sometimes impact the progress of a professional career. Depending on personal situations, but also on geographical areas and the way access is considered, appropriate decisions need to be taken when a simple adaptation is

not enough. As an example, Blaine Harrison (Figure 24), the lead singer of the indie rock band Mystery Jets, based in the United Kingdom, was born with spina bifida, a condition preventing the spine and spinal cord from developing properly. Despite his mobility impairments that might have prevented him from learning to play music instruments, he persisted and formed a band, with the idea that this would help him to be more included in the music scene, idea aligned with principles of the social model. However, he had to change his initial desire to become a drummer, realizing the limits of his own body. This is where social and medical models conflict: without medical help, Harrison could not perform the way he wanted; yet he completely ignored the medical aspect, finding his own ways of dealing with his changing body. He told me about the evolution in the process of learning the instrument:

Drums were actually my first instrument. (...) What I always found is that my legs were a hindrance; they always held me back. With my arms I found that the synchronicity came to me very naturally; I would think about the beat and it would hit where I wanted it to beat, but with the legs, they would always be behind where I wanted them to be. I had to think about it, and I had to train myself to think earlier than when the beat was expected to be, so it would hopefully land on time. But most of the time it wouldn't land on time, so I had an in-timing drumming on top kit, as we call it, and then the kick-drum and the high-hack were always behind.³¹ It was forever incredibly frustrating to me. Which is why I got into programming drums because I can hear the beat in my head, and I can translate it without having the obstacle of having my feet a beat behind the rest of my body.³²

Harrison then turned to singing, guitar and piano. Voice is his main instrument. His father was involved in the whole process, being a guitarist himself. Once they were clear who

³¹ The top kit, the kick-drum and the high-hack are three parts of a drum kit.

³² This direct quote by Blaine Harrison is taken from our interview conducted over Skype on October 30, 2020.

would carry which role (signer, guitarist, player, drummer, bassist, etc.), they could form a band with their friends. *Mystery Jets* started in 2004 and is still performing today.

At their beginnings, they agreed collectively that Harrison's disability would not be an issue: they planned tours without taking into account his disability and thought they would be fine, they would adapt to the situations coming with each venue. Nonetheless, they had difficult moments, realizing the lack of accessibility of many performing places, which led them to define new rules to play only in venues meeting a minimal criterion of access to disabled audiences and performers. They also had to pause some of their tours and their 2019 album release because of Harrison's medical issues. That series of situations ignoring disability to a point where it hurts a person cannot really fit any model of disability: it is important to consider both the medical and the social aspect in order to be included in society.

When they had to pause their activities, Harrison did not hide his story anymore. He told me that he felt incredibly blessed by the reaction of the band members, the band fans, and even the producers, supporting him in his decision to take some time off to recover properly.

Gaelynn Lea (see Figure 25), an American singer and violinist, was born with a physical disability called Osteogenesis Imperfecta, or Brittle Bones Disease. She grew up with bent arms and legs and has used an electric wheelchair since early childhood. In fifth grade she became interested in the school orchestra. After hitting a perfect score at the listening test, she joined the ensemble. The teacher suggested that she start with the cello, but the instrument was too big for her to use it in a conventional way. She then switched to the violin.



Figure 25 - Gaelynn Lea

Photo: Paul Vienneau

With the help of her teacher, she developed a technique of playing her instrument that still applies today, 30 years later: she holds the violin upright as she would a cello, and holds her bow – which is a half-size smaller than a traditional bow – like a double bass player. She had to adapt the position of her fingers and her arm:

My elbow doesn't fully extend because of the bend in my upper arm, but the fingers work fine. I can't use my fourth finger on the violin, not because it doesn't work, but because the angle of my hand is not in the right spot. So I shift up to the second position, which means that I just move my whole hand farther up the fingerboard when I need to use the fourth finger. I had to make some adaptations, and then because my arm doesn't fully extend for the bowing, I use a half-size bow, a smaller bow, and just modify the bowing techniques a little bit. But that's something that my private lesson teacher has helped me with. In order to stay at pace with my fellow students in orchestra, they would go through the orchestra music with me and adapt the fingerings and the bowings for me. Then I could practice the pieces a little differently at home. That's how we made it work.³³

³³ This direct quote by Gaelynn Lea is taken from our interview conducted over Zoom on February 1st, 2021.

With the years, she also added a looping pedal to add effects to her own playing and she started singing her compositions over the looping patterns she created with her violin. She still performs this way today. It is important to recognize that this ingenious adaptation started with a collaborative exploration of playing techniques with her teacher. If the teacher would not have been open enough to go against conventions to consider adaptations and other options for her student to perform, Lea would probably never have learned music. Lea was classically trained in this orchestra but could only use three fingers for her fingering, and had limited range for bowing. With the help of her teacher, she practiced a different bowing style and positioning, but most importantly, she re-fingered the scores of the pieces she played. This is a complex and time-consuming task.



Figure 26 - Felix Klieser

Photo: Maike Helbig.

One interviewee stood out from the rest of the interviews. All the participants who accepted to meet me knew I was studying the lives of artists with disabilities, and that it was the subject of my research. Most of the musicians interviewed talk about the fact

they embrace, or at least include their disability as part of their identity, and how principles aligned with the social model, such as adaptations in order to be included in society, are significant. For the hornist Felix Klieser (Figure 26), it is more complex than that. Of course, it is important for musicians to be recognized as a talented artist first, regardless of the ability or the disability. As with gender, religion, cultural origins, and other aspects of one's life, one has the right to identify themselves with a specific identity, which might or might not include disability.

Klieser told me he does not identify as someone with a disability, yet he was born without arms, and he wrote a book called *Fußnoten: Ein Hornist ohne Arme erobert die Welt* (2014, in German; translation: *Footnotes: A hornist without arms conquers the world*). During the first half of the interview, he told me his story but did not mention the fact that he was born without arms. Klieser is a German horn player, playing the horn with his feet. He is quite popular in Europe since he performed with famous orchestras and conductors in the continent. In England, he is a frequent artist-in-residence of the Bournemouth Symphony Orchestra, which will be mentioned later in this section. He started playing the French horn at the age of 4. He still does not know what pushed him to ask his parents to enroll him in French horn lessons so young, especially since nobody in the family was a musician or particularly attracted to music. But he was sure of his choice and told his music teacher that it would be the French horn and nothing else. Quickly, he won national and international competitions and recognition, which launched his career as a young musician. Regarding his musical education, when I asked him where he started, he replied that it was “a normal music school, like the one in which everyone starts.” The notion of normality seemed important to him. Going back to earlier

discussions on equity and equality, Klieser seems to imply that he was treated equally. He stated that “because salaries of music teachers in Germany are low, nobody is paying attention to the disability of a child, they take any student to earn some extra income.” I do not entirely agree with his statement. Having been raised in France and the Netherlands, neighbour countries of Germany, and being disabled myself, it was not what I experienced. The teachers I worked with in France, for instance, were quite traditional in their method, lived and worked in non-accessible buildings, and since they never worked with students with disabilities, they preferred not to teach students who would require adaptations or could not access the building. There were probably teachers who were thinking outside the box and taking “anyone for the salary,” but then it raises questions about the kind of musical education these children received. If they were unable to learn the same way other learned, were the teachers really looking for solutions? But again, each lived experience is different, and geographical and cultural factors have to be taken into consideration. For Klieser, the only problem that he faced was related to his young age:

When I wanted to start, they suggested I learn other instruments instead of the horn. Not because I had no arms, but because they considered it as a problem that I was very young. Normally, at the age of three or four, you shouldn't start with a brass instrument. But they didn't want to lose me, so they recommend me to play something different, maybe piano or something like this. And then when I'm getting older, then I could switch to the French Horn. Because normally you should be about 8, 9, 10 years old to start with that instrument. But my wish was to play the horn.³⁴

Which he did, with success. I was curious about the adaptations he used. We saw in previous examples that it frequently takes some brainstorming with a team to find the

³⁴ This and all subsequent direct quotes by Felix Klieser are taken from our interview conducted over Zoom on March 3, 2022.

right adaptations for a musician with limbs difference to perform an instrument. He replied:

It's not like a violin or a cello. String players start with a smaller instrument for children, like a quarter of cello, or something like this. With French horn, there is no kid's size. The instrument I play today is a double horn. (...) The only difference is the stand. At the beginning, my instrument was put on the floor. I was the same height as the instrument. So it was very simple to sit on the ground, take the instrument, place the mouthpiece, and play. The position of my mouthpiece is still the same today. But then, of course, I grew up. My teacher said: "Oh, you're too big, and it's not possible to play in this position anymore. You can't really breathe when you sit like this." (...) So we bought a stand. But the stand is doing nothing. It's not creating a sound. It's something which holds the instrument. This is the one and only thing. The idea behind the stand is not that revolutionary, I would say, because it's doing nothing. So there were two steps, from sitting on the ground to using a stand for the instrument.

In short, the "normal" way. But still, growing up means that the feet are growing up. Did this increase in size cause any issues?

Of course, growing up, things are changing. This is normal. I can remember many, many problems I faced when playing the French horn, but nothing to do with my feet, this is not something I can remember. Everyone thinks: "Oh, it should be so difficult to play with the feet." This was never my problem. Playing something quick is not difficult because when you start to play the French horn this way, then your feet adapt, your brain adapt. The problems I had were that I could not properly use the finger ring or something like that. The problems I had were to play very high and to have enough energy and to create a beautiful sound. But these are things beside the use of fingers or toes. The problems I had were normal horn player problems.

The insistence on normality was something I did not expect in our conversation, but for me, it is related to the rejection of the medical model. We saw previously that "normality" in the medical model is the defined standard for bodies of people who do not have any disability, impairment, or malformation, whose body is intact (Hughes & Paterson, 1997; Straus, 2006; Mitchell & Snyder, 2012). His notion of "normality" is different: for him, it consists of the rejection of the concept of a different body itself. Any

child with a disability should be treated like other children, from the education to the performance practices. Looking at equality and equity in the Human Rights Model, for Klieser, any child should be treated equally, no matter the outcome. In his case, the rejection of the disability is not complete since he did write a book about the fact to be a musician born without arms, presenting him as a leader musician with disability through its title. I asked him what pushed him to write it. He did not give me an exact answer.

Instead, he replied:

This was not my decision to write a book. This was a proposal from the editor. This was many, many years ago, in 2014. At the time, I was not really sure what this book should be about. It was at the beginning of my career. It comes with making a recording, showing the person how the life as a musician looks like. That's the background of that book.

It is a personal choice to embrace disability as part of an identity. I completely understand the fact that disabled musicians want to be seen as musicians first, but for me, we cannot avoid the conversation, especially with a very visible disability. In order for the world to change and accept disability, the world needs to know what it is to live with a disability. It is frequent that people with disabilities become educators themselves, sharing their lived experiences with their communities and advocating for their rights to become part of the society, so that people who do not know what it is to live with a disability understand what it means and, hopefully, change their ideas and assumptions about what a disabled person can and cannot do or learn.

Drawing a parallel between examples of current music education practices presented in this chapter and the Human Rights model, two approaches emerge. An equal approach consists of taking students with disabilities because of salary or curiosity rather than aiming for specific musical goals. An equitable approach consists of setting some

objectives and finding the right tools to advance in the studies, pushing student and teacher to work as a team, adapting the tools when needed. Each musician I interviewed faced their own challenges with both approaches. These discussions triggered my interest in developing an accessible approach to music education.

2.5. Inventions and new technologies

Tools and techniques used by musicians with disabilities are important, both in music education and in performance practices. Physical limitations are one of the first causes of stopping, or even not starting, to learn a musical instrument. It is assumed that a student with mobility issues, for example with only one functional hand, cannot play an instrument that has to be held with two hands, for example the saxophone. This is when engineers step in. Traditional instruments have been reimaged and customized to address physical access needs.

Two types of modifications can be found: adapted and adaptive instruments. Adapted instruments are existing typical instruments which have been modified or adapted by specialized technicians to suit a specific need or ability. Adaptive instruments have been specifically designed from its conception to be accessible for people with disabilities. This last category takes its roots in the principles of Universal Design, mentioned earlier, in which products, environments, and programs are conceived to be usable by all people, and in our case, regardless of their ability or disability. In recent years, companies started to think of musicians with disabilities, including invisible ones, who could not use their instruments in a conventional way and developed adaptations.

The world of adaptive instruments has silently progressed in education and in professional music. In the UK, Arts Councils were early supporters of disabled

musicians, which allowed companies specialized in adaptations to develop. For instance, *Take It Away* opened in 2007, and The OHMI Fund (*One-Handed Musical Instruments*) was created in 2011. Both work with people with different types of disabilities. They provide custom-made adaptations in a defined budget, and a team of engineers and inventors finding solutions for conductors, musicians, composers, or music students with disabilities, using a variety of techniques such as new technologies, 3D printing, and other techniques. Similar companies now exist around the world.

Instruments adaptations projects are also subjects of research in universities. For instance, a woodwind professor at the University of Nebraska Kearney (UNK), Dr. David Nabb, lost some mobility after a stroke. He worked with an instrument designer, Jeff Stelling, to conceive a one-handed saxophone. The system was developed between 2000 and 2003. The toggle-keys allow the entire instrument to be played using only one hand. The challenge was that the 23 keys normally played by nine fingers now had to be played by only five. Nabb gave a presentation of the instrument at the World Saxophone Congress in Minneapolis in 2003:

At the heart of the Stelling Brass one-handed saxophone system is a unique “toggle” mechanism. The key system allows one index, middle, or ring finger to perform the functions normally executed by the same fingers on both hands. The right hand index finger operates the B key, the B flat, and F keys. The middle finger operates the C key and F sharp. The ring finger operates the G and D keys. (...) [On the back side of the instrument,] the palm keys are organized as a “mirror image” of palm keys on conventional instruments, operating for high D, E flat, E and F. (Nabb, 2003)

A detailed chart, pictures of the instrument, and videos are available online. Nabb also gave a TED Talk titled “Notable Differences: The Case for Adapted Musical Instruments” (Nabb, 2017). The One-Handed Woodwinds Program promoting the

instrument is still active. In 2024, Nabb was given a cheque from the UNK NAFME (National Association for music Education) Chapter to finance instruments for younger students with disabilities.³⁵ In an article titled “Adaptive Engineering for Musical Instruments” (2005), James P. Snedeker relates his experience as an adapted instruments expert and some projects he was involved in.

If these projects are fascinating, it is worth highlighting that they have a cost, which in the case of these examples are frequently covered by universities. It is rare that these modified instruments could be funded at individual level. However, they show that imagination and collaboration give great results.

Adaptive instruments can also fit different hands positions. Maarten Visser, an instrument builder based in Amsterdam in the Netherlands, has been a pioneer in making adaptive wind instruments for musicians with physical limitations, starting his work in 1984. He founded FluteLab, where he and his team create adaptive concert flutes and Boehm flutes (which is another type of concert flute). He invented the swan-neck headjoint, changing the tilt of the mouthpiece, which for some people provides extra balance and stability in the posture, and the vertical flute headjoint, which allows to play the flute vertically, as if it were a clarinet or a recorder (see Figure 27). In 2014 he won the OHMI award for the One-hand flute.

³⁵ More about this program can be found on University of Nebraska at Kearney’s One-Handed Woodwinds Program. See University of Nebraska, 2024.



Figure 27 - Flute Lab flutes

Flutes with vertical flute headjoint (left) and swan-neck headjoint (right)

Photo: FluteLab

With the improvement of new technologies, other possibilities have been developed to help people for whom physical adaptations are not enough. A wide range and type of technology is used. The use of computers is not new: in the early 2000s, the movement-to-music, or MTM system, became known to developers as an affordable computer system that allowed musicians with limited movements to play and create music. This technology has helped many disabled people to complete tasks they could not achieve without the computer, thanks to programs such as screen readers for people with visual impairments, but also computer systems able to control musical instruments.

One of the early experts of this technology was Pauline Oliveros, an American composer and accordionist who worked on experimental and electronic music. She developed the Deep Listening method, based on principles of improvisation, electronic music, ritual, teaching and meditation. This method was showcased by the Deep Listening Band, founded in 1988 by Pauline Oliveros (accordion, electronic machine,

composition), Stuart Dempster (trombone, didgeridoo, composition) and Panaiotis (vocals, electronics, composer). Then Oliveros opened the Deep Listening Institute (now Center for Deep Listening), organizing retreats that attracted many professional and amateur musicians. Participants practiced the art of listening to environmental surroundings and responding with improvisation, either in group or in solo. Oliveros was interested in any form of listening and reflecting.

In 2006, her friend Leaf Miller, an occupational therapist and drummer, invited her to Abilities First, a school for children and young adults with disabilities in Poughkeepsie, New York, and asked her to help them make music more accessible and inclusive for those whose mobility limitations did not allow for physically grasping a shaker or stick, or playing a hand drum. This is how the Adaptive Use Musical Instruments (AUMI) project was born. She was a professor at Rensselaer Polytechnic Institute (RPI), well connected with the digital world through her electronic instruments. She worked with the developer Zane Van Duzen and the project manager Zevin Polzin to conceive the first prototype of AUMI in 2007, combining a camera and a program developed in the musical coding language MAX/MSP/Jitter. The application was made available for free on Mac or PC, to ensure of its affordability, and was continuously updated by the developing team, funded by Pauline Oliveros. The first performance involving AUMI was in 2010 at Abilities First.

An iPad version was released in 2013 by Henry Lowengard. Thomas Ciufo started working at the Center for Deep Listening in 2013 and led the team to a major update of the Mac and PC versions. The same year, the AUMI Consortium was formalized, comprising six institutional sites with community partners. Oliveros died in 2016 but her

legacy lives through the many projects still using the app today. The AUMI training program was developed by Leaf Miller and Jaclyn Heyen after years of using AUMI in a drum group for students with disabilities. Workshops have been presented at universities, schools, rehabilitation centers and conferences both nationally and internationally (AUMI, aumiapp.com).

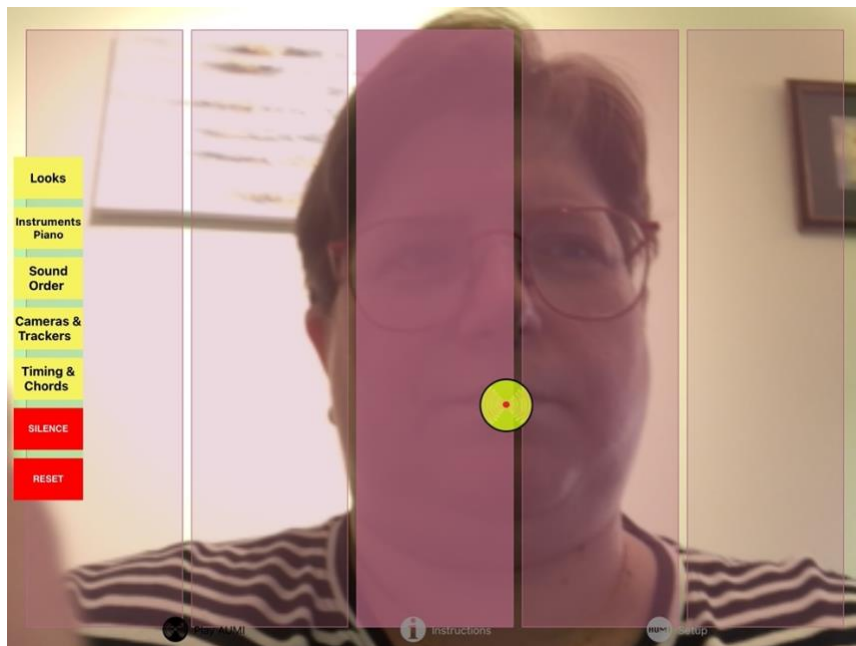


Figure 28 - Diane Kolin using the AUMI app on an iPad

The app uses the front-facing camera on a laptop or desktop computer or a tablet to track the movement of a particular part of the body. Its interface allows the user to play sounds and musical phrases through movement and gestures (see Figure 28). The website specifies: “It can be set to a nose, a finger, anything that moves. The movement triggers sounds, selected from a vast library of possibilities. The range of motion needed to trigger the sound can be adjusted on the screen to fit the range of motion of each user.” The “vast

library of possibilities” consists of a MIDI (Musical Instrument Digital Interface) instruments database proposing multiple combinations of instruments. The interface offers several settings depending on the access needs of the player: different sizes and shapes of grids and cursors to produce sound, different instruments, chords, colours... It is a perfect tool for improvisation, an instrument that can be used by anybody, even with limited mobility. I used this instrument as the starting point of the music accessibility workshops I developed, which will be mentioned later in this dissertation. The AUMI instrument, its evolution and its possibilities have recently been subject of a book of scholars and educators (Ciufo et. al, 2024).

Some musicians I interviewed use instruments driven by computer systems to perform. Clarence Adoo, a professional trumpet player, had a bad car accident in 1995 that left him paralyzed from the neck down. Today he plays an adaptive instrument called a Headspace that he can control with his head. Even after his accident, he believed that music was still a possibility for him. He never stopped thinking that his music training would become useful. Something pushed him to explore the possibilities his body offered him, taking into account his position in the wheelchair, the movements he still had, and to consider the help of a computer to play music. It took some time to process:

I didn't think about it for about a year or 18 months. And then a trombone player who had been doing all sorts of different work around Europe (...) wanted to see if him and his friend Rolph Galhal, a composer with a very clever brain, could build an instrument that was suitable for me. Rolph Galhal spent a couple of days at my house, and we came up with this instrument. He asked: "What movements do you have?" And I said: "The only one I have control with is my head." This is how I use my computer on daily basis, using these sensors above the screen. So we incorporated that. I didn't need to learn about moving my head to the left and the right. The blow tube was the left click of the mouse, and I was used to

blowing into the tube to start notes as I did with the trumpet. So we built this instrument, the Headspace, through that use that I have.³⁶

A picture of Clarence Adoo playing his Headspace can be seen in Figure 29. The first version of the instrument already allowed Adoo to play, which was a very positive experience, but the quality of the sound, which was a database of MIDI instruments, was still to improve.



Figure 29 - Clarence Adoo playing his Headspace

Source: Clarence Adoo

Each musician develops a particular colour of sound, an emotion that can be lived and shared with an audience, one that took many years to be developed before an injury or a disability or a worsening of a condition. I asked Clarence Adoo if he had been able to find back his “sound”, the one that makes him happy when he performs:

[Rolph Galhal] tried a few things when he was with me, then went away to build the machine. (...) He came up with an instrument that was pretty good, very solid and reliable. But I didn’t like the trumpet sounds on it, so people sampled some of

³⁶ This and all subsequent direct quotes by Clarence Adoo are taken from our interview conducted over Zoom on March 17, 2021.

the notes that I played and recorded, and put those into the instrument. I had to stop complaining because it was me that was playing.

For many years, Clarence Adoo leads workshops and masterclasses, performs in orchestras, teaches young people, conducts ensembles with his head and his eyes, and sensitizes audiences about music and disability. He invited me to attend a masterclass in which he demonstrated his instrument and the multiple possibilities it offers.³⁷

Drake Music is another important organization for musicians with disabilities. Based in the UK, it is known to be a major structure combining new technologies and music to help disabled performers. First called the *Drake Research Project*, it was founded by Adèle Drake in the mid-1980s to prove that physically disabled people could actively take part in music making, thanks to the advances being made in music technology. They have an accessible musical instruments collection. Drake Music was established as a charity in 1993 and has since been a continuously active organization, allowing multiple partnerships between artists and opening new possibilities. Members of the Drake Music lab (DMLab), a community of makers and musicians, regularly meet online and in person to build new instruments, sharing their ideas, innovations, and dreams, based on the access needs of musicians. They organize hackathons to brainstorm and combine their skills to produce a mix of digital and physical instruments.

³⁷ Clarence Adoo, Masterclass to the National Youth Brass Band of Great Britain, private masterclass, April 5, 2021.

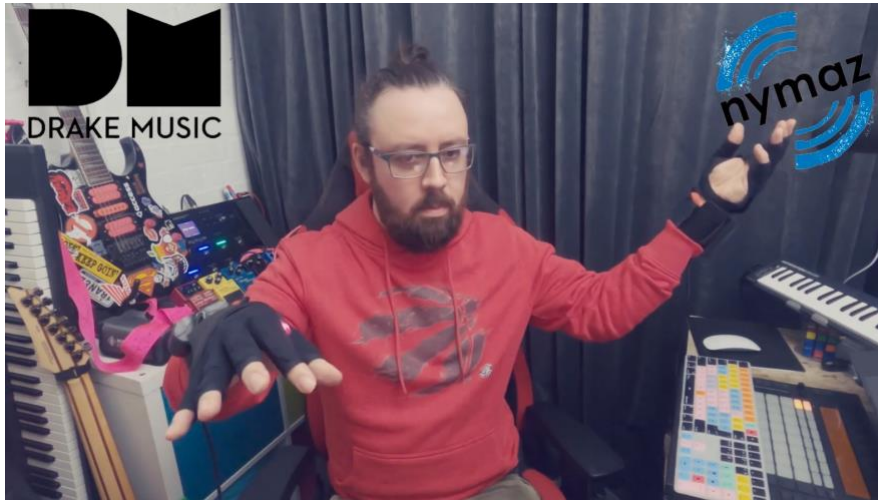


Figure 30 - Kris Halpin performing with Mi.Mu Gloves

Source: Drake Music, YouTube

Many musicians have benefitted from their services. Among them was Kris Halpin (Figure 30), whose cerebral palsy stopped him in his professional career as a guitarist. The impairment in one of his hands was progressing, and his vision of the future as an artist was uncertain, before he reached out to Drake Music. After a productive workshop involving engineers, coders, inventors, and disabled musicians, he was hopeful that he might find an adaptation that could fit him. At the time, Drake Music was in conversation with a team exploring Mi.Mu gloves, a wearable connected device that uses a range of sensors to translate gestures into sounds. He told me how these gloves transformed his music making:

Imogen Heap, a singer based in the UK, was developing a new interface to perform electronic music live. (...) She did a test of a data glove manipulation in MIDI data at MIT. (...) There'd be 15 pairs made, and 15 lucky people would be chosen to try out this next phase of having these prototype gloves. (...) Drake Music decided to join the program at this time, and it was casually thrown in my direction. (...) They gave me one of the prototype pairs of gloves, and that's where it began. It was kind of hyped that a disabled musician was going to take

this. It was a quite accidentally imaginative invention of a new kind of accessible tech. There is an artificial intelligence that learns the movements of gloves, the technology doesn't know that my movements are impaired, it doesn't have any kind of framework in which to judge if whatever movement I give is completely valid. That's what makes it a really inventive piece for accessible tech. Not that it was ever designed to do that, it was not the original intention, but consequently it became quite a big deal.³⁸

Kris Halpin can be seen using the Mi.Mu Gloves in Figure 30.

Finding an instrument that does not recognize bodily impairment is the dream of every disabled musician. However, switching from a traditional instrument to a one controlled by new technology can be challenging: how do you adapt to, and adopt, an instrument that has no soul, no vibration, no sound that could be modified by the musician? A musician who is inclined to learn how this new technology can have a specific sound can spend hours to practice. Once the technical aspect is understood, this can be an opportunity to establish a new trend, not developed yet, thus opening new experiences. What makes the difference in this situation is that the computer does not know that the musician is disabled. It does not judge disability. It is a tool. At the same time, the tool is used to remove the barriers. Kris himself uses the notion of framework, as if to say: we do not need to have a framework that judges your medical issues or your social abilities (i.e. medical or social models of disabilities), we just need the machine to help interpret the movements, which are valid movements for the computer (Halpin, 2021). What is interesting in his conception of performance with his Mi.Mu gloves is the notion of perception of his own role as a disabled performer: what makes a disabled performer is the way people perceive difference as a disability, which the machine does not care about; thus, his own perception is changed: he does not feel his disability

³⁸ This direct quote by Kris Halpin is taken from our interview conducted over Zoom on March 15, 2021.

prevents him from performing anymore, he is free of his own movements, even “disabled” ones, and can ask the machine to interpret these movements the way he likes.

In his role as an educator, the one-handed violinist Adrian Anantawan, mentioned earlier, became interested in the diversity of adaptations for his own students. For this exploration, he conducted experiments at a children's rehabilitation centre in Toronto in Canada, named Holland Bloorview. They created an instrument primarily used for music therapy, simply called the Virtual Instrument, which he presented during a short TED Talk in 2011. The instrument associates shapes to notes. Depending on the access needs of the player, the control can be done through a camera detecting the movements of a hand wave or a head lean. This tool allowed players to perform simple tunes. Anantawan wanted to explore the possibilities of using it with a bigger ensemble such as an orchestra. When I interviewed him, he told me how he developed his original idea:

I met a grad student working at Holland Bloorview. He was a former musician who became paralyzed due to a neurological condition. It was a good fit to be able to do that type of project with him because he always wanted to play again with his peers. He played the violin himself for several years. So we created a project in which we used the instrument within a chamber ensemble context first, and then we scaled it up to be able to play with a full orchestra in Montreal a year later. We needed to think about what we wanted the end result to be and then we tried to use the technology to be able to serve those needs rather than starting with the technology first and then trying to see what you do with it.³⁹

The concert was performed in Montreal. In his TED Talk, Anantawan presents a short clip about the work in progress. During our conversation about music education, I asked him if he also used the technology in his classroom. He replied:

In the classroom, we use technology in different ways. We see what the needs of the students are and then think about ways that the technology can impact the students to be able to enable them to participate in the orchestra. So what we’ve

³⁹ This and all subsequent direct quotes by Adrian Anantawan are taken from our interview conducted over Zoom on February 8, 2021.

been doing is actually connecting to engineering students around Boston and basically saying: “We have this child who has a very specific type of need. He wants to play the xylophone, but he has cerebral palsy and isn’t able to hold the mallets, control the mallets, for instance”. So we brainstorm different types of ideas that might work. And generally, we try to have several teams working on the same type of problem. And then the participant, the kid, decides which prototype they want to actually try in the end. And sometimes it’s a physical adaptation of the instrument. Sometimes it’s an additional type of holder, like I have from my bow, or it might be a technological solution in which maybe the xylophone keys are larger and connected to a computer so that they’re able to aim a bit easier to get those specific keys.

Anantawan shared with me his thoughts about the limits of new technologies in terms of fluidity and efficiency. For him, a digital instrument should be taken as such. If new technology is helpful and works when a physical instrument cannot be held or used, it should not entirely replace simple solutions for an adaptation when these solutions can be applied.

The cases described above are only a few examples of accessible tools and techniques. There are many other options for adapting instruments. These experiences show that music instrument engineers, and designers, who know well the specificities and parts, can help, either for a simple advice on how to self-modify an instrument, for re-imagining and re-designing an instrument, or for the creation of a brand-new instrument, all based on specific needs. For me, adapted (modified) and adaptive (created) instruments are examples of a way to allow disabled musicians to fully integrate the music scene, with principles aligned with the social model of disability. While these modifications or adaptive designs are possible thanks to the imagination and ideas of researchers and engineers, these projects take time, money, and expertise. All organizations working on the topic of building accessible instruments know that they can

become costly. However, there are multiple funds and labs working on instruments design that can help.

2.6. Disabled musicians and accessibility today

The lack of accessibility of venues to performers with disabilities has always been a central topic in conversations with disabled musicians. My interview with Lachi (Figure 31), a singer with a visual impairment living in the United States, centered on access of artists with disabilities to concert venues and the music industry at large. It started with considerations aligned with the social model, integration of disabled artists in society, but also with the human right model since she became an engaged activist for the cause. She shared with me how her engagement started:

When I first got signed, I played with a band in which everyone was visually impaired or blind. When we would go to concert venues to do our shows, there was no accommodation whatsoever. A lot of stages don't really have the safest way to get on a stage. There is no ramp for people with wheelchairs, some of them don't even have stairs, so people have to take a big step up to get on to the stage. They tell you: "Just get up, you're fine." But for someone who's blind, that's almost like a task that is life or death in a sense. Lighting is always an issue when we do night clubs which are often dark. I personally have night blindness, so being able to see in a dark club is very tough, and then it's also difficult to find whoever you're supposed to be dealing with, so a lot of the times I will travel with some sort of road person, or my agent, in order to make sure everything is fine.⁴⁰

⁴⁰ This and all subsequent direct quotes by Lachi are taken from our interview conducted over Zoom on October 30, 2020.



Figure 31 - Lachi

Source: Lachi

Whether it is for the audience or for the performer, the main issue with concert venues has to do with access and accessibility. The artist is invited to perform in venues that do not consider access and accessibility as part of its standard procedure. Moreover, the way venues consider access might be to purchase a ramp for wheelchairs, but not necessarily to increase lighting or to have light markers for visually impaired people to navigate freely. Due to her experiences, Lachi decided to pay more attention to accessibility issues and to the representation of disability in the professional musical world. She got involved in disability advocacy through an organization she works with, called *Women in Music*, a large association helping to propel women and those who identify as female in the music and entertainment industry. Thanks to her acquired knowledge within *Women in Music*, she got involved with the Recording Academy (Grammy Awards) after attending an online panel about inclusion:

One day they had a Diversity Inclusion panel online, which I was so excited about because they never did that before. But at their panel, they discussed race, sexual orientation, religion, but they did not discuss disability. I was just an attendee, and I was adding comments, asking why they weren't discussing disability, and none of the panelists said anything. I started to get upset by the lack of reaction. I started listing facts such as: "61 million Americans identify as a person with a disability, yet only 2% are represented in Hollywood, and even less than that are played authentically." I was going on and on, copying and pasting. Finally, someone said: "I see someone in the chat saying some things about disability, and yes, we don't talk enough about disability." It was a very short thing. After it was over, I felt embarrassed because I went too hard. But then they ended up calling me and they said: "We were very pushed and touched by all of the stats you gave. We would like for you to moderate a panel for disability awareness." I put it together, I moderated it, it was very well attended. And it was very good. So, from that point forward, I've hooked up with the Grammys to talk about disability awareness and host discussions and panels and started bringing in some initiatives.

Lachi's actions demonstrate that the battle for being recognized as a professional musician, not as a disabled professional musician, can be part of a wider conversation within the music industry. By talking about the issues, we might see changes in the accessibility of these workplaces like we see in other domains. We might include the needs the performers have in terms of adaptations (for example, through the use of new technologies or connectivity to adapted instruments), mobility and access (for example adapted lighting, ramps to access the stage, accessible washrooms), as part of a regular contract for a concert. After their conversation with Lachi, the Recording Academy invited her to co-host panels about accessibility. I attended one of them in April 2021, organized by the New York Chapter of the Recording Academy, entitled "New York Chapter: Music, Purpose + Community." She invited the two-time Oscar nominated singer and songwriter Siedah Garrett, the violinist and songwriter Gaelynn Lea, the singer and slide guitarist Ryan "Gooch" Nelson, and the hip-hopper Namel "TapWaterz" Norris, all disabled musicians, to give ideas of possible improvements of inclusion of disabled

artists in the music industry, starting with the observation that disability is not included as a diversity, particularly in big musical organizations. The artists pointed out that the word itself, “disability”, seemed to be a taboo. There are not enough successful disabled musicians to act as role models for young musicians who wish to become professionals. As Blaine Harrison pointed out, and as confirmed by Lachi and her guests during this panel, in order to get some representation of disability onstage, it often comes down to the efforts of the disabled community to do something about disability representation, by creating special events fully open to all kinds of disabilities, or by claiming the desire to become a role model as a recognized disabled artist. However, the venues, and the music industry more broadly, do not carry out the efforts of making themselves more accessible, and thus more diverse and inclusive. Disabled artists rarely appear in the media, and they are hardly highlighted on social platforms. Visibility and acknowledgment of these artists should be more frequent in order to make disability and inclusion part of the reality of the industry. During the panel, there was a conversation related to CDS, comparing disability in the contexts of social and medical models. Illustrating Gaelynn Lea’s explanation of the social model, Lachi declared:

I actually like the word disability, I know that people are afraid or don’t really like the word “dis”, D-I-S, the prefix “dis”, but I am distinguished, I’m distinct. Those start with D-I-S, and I have a disability. And I don’t do things *despite* my disability, I do things *because of* my disability. And I encourage anyone with a disability watching this, that it’s who you are. We need to start looking at things in the social model, as opposed to the medical model, which means that it’s not about an impairment. (...) If I have a wheelchair and you give me a staircase, I can’t get up the staircase, but if you give me an elevator, I can. And all of a sudden, I’m no longer “dis-abled” because I’m able to get to the second floor. (Recording Academy, 2021)

The representation of disability in music industry aligns with the same idea: if more and more disabled artists are shown on screen, featured, heard, then they can claim that they have to be treated as any other artists. Only that way will preconceived ideas of disabled artists being different and less capable disappear, in favour of musicality and talent. But it can only work if organizations and venues are willing to collaborate with disabled artists.

Another musician I interviewed, mentioned earlier, became increasingly concerned about problematics of accessibility and visibility. Growing up, the violinist and singer Gaelynn Lea knew that she wanted to build a career in music, but she would not picture herself as a professional classical musician because of her disability and the lack of access to accessible venues. She decided to explore other genres and discovered Celtic music and folk music. In 2006 she joined her first band, playing and singing Celtic Fiddle Tunes. Lea has a very distinct mezzo-soprano voice, which was described as “ethereal” in a local newspaper (Dyroff, 2016). In 2011 she was introduced to the looping pedal, which transformed her performance practice. Since then, she would play a theme with her violin and make it loop, then sing over it. The same year, she composed her first song. In 2016, she entered the American radio NPR’s Tiny Desk Contest, receiving over 6,000 applications every year, and won. Since her music was promoted all over the United States, Lea and her husband embarked in a tour that led them to take the decision to quit their jobs (Lea was teaching the violin), sell their house and travel the world for a tour. To date, she performed in forty-five states and nine countries. During her tour she embraced the concept of disability pride, which consists of seeing disability as an ordinary component of our society and of our identity, of which one should be proud. She fights for accessibility but also for a more thoughtful vocabulary about

disability, which should not be associated with negative wording or feeling. Everybody who ages becomes disabled at some point. Disability is part of an identity, along with gender, race, and anything that makes someone special. Disability pride originates in these values. Seeing the world with the perspective of disability pride means acknowledging the barriers of the society, but also defending and celebrating open doors. Lea's approach of performing has evolved with her experience of touring. Being in a power wheelchair, she faced many occurrences of non-accessible venues, for a diversity of reasons ranging from the stairs in front of the building, requiring ramps that were far from secure, to a lack of access to the stage itself, forcing her to perform in front of the stage instead of on stage, or to the dressing room, or worse, to the toilets. Lea is pushing more venues to apply accessibility standards, but also all artists, with or without accessibility, to give their priority to accessible venues.

I've gotten better at asking the right questions ahead of time. And I also play at a lot of nontraditional venues. I play a lot of churches because usually those are more accessible. In the US, I've managed to put together a little resource pack where they can build a ramp. I tell them how to build it, or they can rent it, or they can purchase one ahead of time. So some places have gotten better at that. Overseas, it's mostly looking for venues. Every town has one or two places that work. And it's sad that it's only those two places, but it's better than nothing. I have managed to find venues. There's one place in England, in Manchester, it's a tiny little pub. The main venue is upstairs, but they do have a back room that I think is usually just used for parties, but I used that room. The first time, they didn't tell me that there were steps to get in. Only one or two, it wasn't many. The bartenders borrowed a ramp from a construction site next door and put it up. Then the next time I came, they actually bought a ramp. It is doable. It's not like it's impossible to do it.⁴¹

The perception one has of disability in society is constantly disrupted by biases and preconceptions that are often wrong. Lea became a public speaker, building awareness on

⁴¹ This direct quote by Gaelynn Lea is taken from our interview conducted over Zoom on February 1st, 2021.

what being disabled means, and how details such as the language used to speak about disability can make a difference. For instance, terms such “victim of a stroke,” “suffering from a disability” or “confined to a wheelchair” are often heard. Disability activism offers alternative options to pessimistic appellations. These terms can be simple: a person uses a wheelchair, experienced a stroke, is disabled, or has a disability. Lea highlights the emotional impacts of the current labels on members of a community who do not recognize themselves in the negative denominations. Moreover, these words support the medical model of disability as opposed to the social model explored earlier: the medical model endorses the idea of disability as being broken and needed to be repaired. Disability can be associated to a range of positive words such as innovative, creative, flexible, and powerful. Terms used can affect self-confidence and self-esteem.

Lea’s reflection about language argues that positive terms with the intent to erase disability, such as “handicapable” or “differently abled”, should be avoided. The first one uses an outdated and offensive term, the second one is problematic because we are all differently abled. These euphemisms for disability can obscure the reality of living with a disability and may be seen as a condescending attempt to avoid the word “disability”. These expressions do not fully capture the challenges and realities faced by individuals with disabilities and can be perceived as minimizing the impact of their experiences. Besides, there is nothing wrong with the words “disabled” or “disability”. Another important battle for Lea is the importance of teachers for apprentice musicians with disabilities. Accessibility in music institutions is not only about accessing the building, the classrooms, and the toilets. It is about music instruments adaptations or bodily adaptations. The task requires the educators to think beyond what is considered as a

limitation, and perhaps to make multiple tries together until the adaptation suits the student. What is important is to give the pupil enough confidence to pursue their musical studies. To go further, young musicians with disabilities often lack a model. There are many musicians who are happy to share their experiences. Children are usually curious, and the earlier they have access to other forms of music-making, the more they will be willing to think out of the box. Lea's leadership comes with her ability of expressing her strong positions about disability in professional music, either with her compositions or with her public talks. Her presence on the field has opened conversations about the accessibility of performance venues and music education.

Many barriers prevent disabled musicians from fully embracing their careers because of issues regarding the perception of artists, accessibility, representation, and inclusion. In 2022, Lachi and Gaelynn Lea co-founded RAMPD (Recording Artists and Music Professionals with Disabilities), “a professional platform equipping the music and live entertainment industry with disability inclusive tools, programming and strategy. RAMPD also connects the industry to a global directory of peer-vetted music and sound creators and industry professionals with disabilities, neurodivergence and other chronic or mental health conditions, to find competitive opportunities, and highlight visibility and community to their professional members” (RAMPD, 2025). They offer disability inclusion to industry and venue partners. RAMPD's Mission is to amplify Disability Culture, promote equitable inclusion, and advocate for inclusive and accessible spaces in the music and live entertainment industries.

The RAMPD leadership team gave me access to their 2024 impact report numbers on April 2025 (used with permission): at the time of the report, they counted 90

professional members (including me as a performer and musicologist – note that there were only three musicologists in the cohort at the time of the report) across the globe (80% based in the USA including half in the area of New York City, Los Angeles and Atlanta; the rest are spread across the country and in the rest of the world) and 1,200 community members; they organized 17 professional events for their Verified members program (of which I am part – this program allows access to participation to paid conferences, concerts, recordings, and other events, representing RAMPD as a music professional), involving 30 professional members; by the end of 2024 there were 70 professional members, including 50% part of the Verified members program; they almost doubled their number of professional members through 2024.

Such an initiative makes a difference. Not only is RAMPD the accessibility partner of the Recording Academy (among others), but RAMPD artists are frequently featured in their communication, and have a special place on the red carpet during the Grammy Awards. Artists with disabilities finally appear more and more in the mainstream media.

2.7. Findings analysis

This chapter explores the lives and careers of historical and contemporary disabled musicians. The objective with these narratives is to understand the conflicting situations faced by these musicians with regards to their integration into society, from music education to performance practices, and their relationship with the audience. These aspects are important to consider in the context of developing new frameworks to improve music education. If accessibility and integration are taken into account from the

beginning at the education level, the issues faced by disabled musicians from the past can disappear or be reduced for today's students who want to progress in their music studies, or who envision a career in the music industry.

Observing these case studies of historical and contemporary musicians affords several conclusions. Documented sources show that only blind musicians were originally highly integrated in the Western music world, usually because of their good ear and capacity of adding non-visual elements to their music-making, instruments tuning and theory lessons. Little by little, deaf and physically impaired musicians revealed themselves, adopting new tools and techniques suited to their access needs. With the evolution of medicine, disabled people were excluded from society or undervalued in their careers, since they had to work differently in order to progress.

These trends led to a lack of accessibility and inclusion of musicians with disabilities in our contemporary society, today analyzed by models of disabilities defined by CDS. The discussion with musicians in this chapter brings a range of possible improvements to the position of disabled artists in the professional musical world. Each of these ideas can be part of a toolbox that could expand the music industry. Musicians I interviewed highlight the powerful impact of music-making on their life, with support from a team, family, friends, teachers, and collaborators. Music has helped them grow, accept their disability and work around it to become professional musicians. Many of them talked about the social model of disability, or at least concepts and theories found in the social model, as a useful toolbox from which they have benefited.

However, many aspects in these testimonies contradict or confront the social model. Evelyn Glennie and Paul Whittaker used adaptations and social mediums to

ensure that their musical skills are seen before their disability, yet they both had to fight the assumptions of the audience and of the teachers to be seen as musicians and not disabled musicians. In those cases, the social model was insufficient to facilitate full inclusion and acceptance. Blaine Harrison, Lachi and Gaelynn Lea formed their own ensembles, rented their own accessible venues, created their own safe, “disabled-friendly” places, to experience a fully inclusive and accessible concert. Paradoxically, this can lead to the opposite effect: exclusion instead of inclusion, within the non-disabled community. In this case, a strict application of the social model can create new issues instead of solving them. On the other hand, the social model of disability completely changed Molly Joyce’s approaches to the society, to disability, to inclusion, to education, and to composition. Understanding the different aspects of the lives, fights, political and societal positions of people with disabilities allowed them to accept their difference and to transform them into their strength.

If we were to build a music education program which would improve accessibility and inclusion, what framework should be used? Kris Halpin’s point is that we do not need a framework. We just need to find the proper tools. He chose to use new technologies because the computer does not know that the person controlling the tool is disabled. For him, using a limited framework can lead to the prioritization of either medical conditions or social capacities. The computer is taught to interpret his “disabled” movements as valid signs to produce music, without showing a preference for one system over another, and without any form of judgement.

Adapted and adaptive instruments, either physical or digital, can serve as tools for music educators to teach students with disabilities. Some can be controlled with very

little mobility, some require more technical knowledge. However, most of these instruments come with a high cost, which anyone cannot afford. If we want to create programs open to all, the cost of instruments have to be considered.

Taking into account the comments and positions from the musicians I studied, I set for objective to create a framework improving current music education, addressing issues faced by the interviewees, but also allowing students and teachers to collaborate. This includes a review of what is currently proposed to disabled students in music education, which is done in the next chapter.

Chapter 3. Disability in Current Music Education

I believe that accessibility and inclusion in music education are crucial for more visibility of musicians with disabilities in the future. Solutions stand in the hands and the imagination of music educators and program coordinators to create mixed curriculums where students with and without disabilities could share the classroom and the musical activities. Music programs are currently facing a budgetary crisis. What effective and costless practices can be found to improve the quality of music education for students with disabilities?

The study of the different models of disabilities and the interviews with musicians presented in my dissertation reveal the impact of negative assumptions about disability due to the lack of communication and understanding of access needs in society. If people asked questions or listened to individuals with disabilities instead of assuming what they can or cannot do, inclusion and integration would happen easily. Anyone can learn in all steps of life, if they have the desire to progress. Teachers have an impact on the way students see life, whatever the age of the student. In schools, children trust their teacher, they learn with them. This is why it is crucial to educate children about what disability represents from a young age. From school to school, the notion of diversity differs. Nowadays, some institutions clearly welcome children with disabilities by offering proper adaptations such as ramps, elevators, accessible washrooms, large doors, space for students with mobility devices, students accessibility services, etc. Students attending these schools have a direct contact with students with disabilities. Children ask questions, they are curious. In these schools, they talk about disability between them or in class. Consequently, they are used to seeing people with different abilities, different devices, different tools, to move, to walk, to study, to converse. This curiosity, this openness, does

not stop at school. Children carry these stories home, they talk about it with their parents. Previous generations usually did not grow up with people with disabilities around them, unless they had members of their families or friends who were disabled. Children with disabilities were not – and are still not enough – included into regular schools, because of the lack of adaptation but also because of the assumption that children with disabilities were different or could not learn like other children; because of the idea that children with disabilities should be grouped together in special institutions that would be more adapted to them; because most teachers are not used to adapt their classroom or their teaching methods to someone with different needs than traditional students, or are not proposed any tools to help them. Despite numerous laws, despite parents' protests, exclusion of children with disabilities from the traditional school system is still a major issue today. No presence, no conversation, no question, no learning. As a result, children who were not in contact with other children with disabilities in school become adults with assumptions that people with disabilities should be set apart and cannot learn, work, and live like everybody else.

3.1. Accessing Music Programs

Schools are still too inaccessible today. Because “disability” is represented by a square logo picturing a wheelchair, the common notion of disability is that most disabled people use a wheelchair, which is untrue. According to the World Health Organization (WHO), recent statistics estimate that around 1.3 billion people – about 16% of the global population – live with disabilities, and only 1.85% of disabled people use a wheelchair (WHO, World health statistics 2024, 72). As for children, UNICEF reports of 2024 show that nearly 240 million children worldwide have disabilities. Almost 25% of the billion

children in the world are still out of school. Among them, at least 50% of children with disabilities are excluded from education. In low- and middle-income countries, the figure is closer to 90% (UNICEF, UNICEF data, 2024). If statistics are unavailable for children attending some form of music education, based on these numbers, we can easily assert that numbers are low.

The main reason for this exclusion remains the lack of accessibility, hindering students' ability to fully participate and learn. Accessibility issues are diverse: barriers exist in physical infrastructure, financial constraints, digital resources, and even attitudes and communication practices. Sometimes the teachers do not know how to behave, how to teach a student who learns differently. The most common accessibility challenge is physical: many schools lack essential accommodations like ramps, elevators, accessible bathrooms, and accessible playgrounds, impacting students with physical disabilities. Digital inaccessibility is also common, despite the improvements seen these recent years during and after the global pandemic of COVID-19: digital learning materials and resources, including websites and apps, may lack accessibility features like alt text for images, captions for videos, and compatibility with screen readers, impacting students with sensory impairments or learning differences.

Children who pass through these obstacles might face attitudinal barriers, which are negative attitudes and stereotypes about disabilities that can lead to discrimination and create a less inclusive environment for students with disabilities. Sometimes schools fail to effectively communicate information about accommodations and rights to parents and students, leading to misunderstandings and missed opportunities. Students who need extra support such as an assistant in class or special transportation services might not

receive financial help to cover the costs. Even in schools providing students accessibility services, systemic barriers can cause a lack of resources, inadequate training for staff, and long waiting lists for assessments or access support.

Finally, marginalized groups such as new immigrants or working-class parents may face additional barriers in accessing support and accommodations for their children. Legislation such as the American Disability Act (ADA) in the United States, or Accessibility for Ontarians with Disabilities Act (AODA) in Ontario in Canada, is supposed to help solving some of these problems. Schools need to prioritize renovations and upgrades to ensure physical accessibility for all students. They must adopt digital accessibility standards for all materials and resources, including websites, learning management systems, and educational software. Educators and staff should receive training on disability awareness, duty to accommodate, and strategies for creating inclusive learning environments. Schools should communicate effectively with parents and students about their rights and available accommodations, and be transparent about screening, interventions, and modifications. Adequate resources and support should be provided to ensure that students with disabilities have access to the services and accommodations they need. Finally, schools should collaborate with parents, disability organizations, and other stakeholders to advocate for policies and practices that promote accessibility and inclusion. The best accessibility and disability experts are people with disabilities themselves and their families, as the “Nothing About Us Without Us” movement mentioned earlier teaches us. By addressing these challenges, schools can create a more inclusive and equitable educational environment for all students, including those with disabilities.

In music education, the instructor's objective is to lead the student toward success and growth. For many years, the teaching methods did not evolve, focusing on the product or the performance of the musical literature programmed by the director or carried by the history of the school. This excluded some students with disabilities from learning practices and performances, due to the lack of accessibility, of diversity of learning opportunities, of educative tools, or of adapted instruments. In recent years, conversations about diversity and inclusion have changed the traditional teaching models. First of all, the recognition of the existence of women composers as equals with their masculine colleagues in music history created a movement of inclusion of repertoire that was long hidden, the most famous being compositions by Clara Schumann and Fanny Mendelssohn in Classical music of the Romantic period, but also Hildegard of Bingen in the Medieval period, Francesca Caccini in the Renaissance period, Louise Farrenc in the Romantic period, Cécile Chaminade, Amy Beach, Rebecca Clarke, Ethel Smyth and Lili Boulanger in the Modernist period, to name only a few.⁴² Disability Studies and Women Studies have been working hand in hand, along with Race Studies and Queer Studies, to provide models to each other to help improve the life of marginalized people.

Multiple problems can be raised triggering the lack of accessibility in music education. Music theory is traditionally based on standard notation. Are there other existing systems? Usually, only traditional Western music instruments, such as piano, violin, flute, drums, saxophone, and so on, are taught in music schools. Why are the musical styles studied in music schools not more diverse? Why do teachers impose a

⁴² See the list of names collected by Grove Music Online, "Women Composers by Time Period." The list presents an impressive collection of close to 800 names. It covers the periods from Pre-medieval to Contemporary (born in 1960 and after).

music style traditionally bound to an instrument, i.e. classical or jazz for violin or piano? Why are students not proposed to play music on their instruments that is usually played on another one, such as, for instance, Middle Eastern music played on an Oud, but taught on a violin? Why is the diversity of worldwide instruments not more represented in music schools? Why are digital instruments not included in traditional learning methods? Why are students who want to play an instrument that they cannot hold without some level of adaptation excluded from learning the instruments they are interested in? Some music educators are still afraid of differences because of these constraints, but we cannot blame music educators themselves, especially since the increasing financial constraints in most educational systems today. Budgets assigned to schools and universities go firstly to Science, Technology, Engineering, and Mathematics (STEM), not to music. However, drawing a parallel with women composers, there are more and more conversations about alternative teaching and learning methods in music schools.

Another recurrent issue raised in discussions about disability and music is the confusion between the medical condition of a student with disability and the music education. Often, students with disabilities have to be registered in special classrooms to have access to music education, labeled “special needs education.” I argue that all students with disabilities do not need to be part of a “special needs education” program to learn music. The term “special needs education” goes back to the oppositions between the medical and social models, deeming a student “special” because of a disability. For a “special needs education” system, students have “special needs.” I argue that all students have specific needs teachers need to address, regardless of disability.

In a previous section, we looked at the different ways artists considered “special” were seen by audiences, either as someone with exceptional talent or as someone “abnormal.” For me, “special needs education” considers students as “abnormal.” I dispute this notion. A program in music education can be adapted to include students with disabilities without being “special,” even if the class entirely consists of disabled students. When it comes to a classroom open to all students, the social model considers that disability is not the issue, but the way disability is represented constitutes a barrier to an efficient integration in music education. I do not claim that “special need education” systems are bad or useless, since this method allows students to have access to music education when traditional educational systems are not always concerned about inclusive education as they do not always admit the uniqueness of each student. I also recognize that “special needs” educational programs help students with complex disabilities find learning methods adapted to their rhythm and needs.

However, I assert that music educators can change the perception of the “special condition” of students with disabilities by removing this notion from music education, especially when children’s access needs can be addressed by adapted or adaptive instruments such as those mentioned in this dissertation. This debate is important in music education programs and has led to conversations about labeling students with disabilities in ways that do not necessarily represent them. It even pushed a famous institution delivering special needs education music programs in the United States to change their name. In 2007, the Boston Conservatory of Music started their Program for Students on the Autism Spectrum, with private instrument and voice lessons for participants with autism. In 2014, two Graduate Programs in Music Education and

Autism began at the conservatory. In 2017, the Berklee Institute for Arts Education and Special Needs was launched, delivering special needs education music programs, the two MA programs for graduate students, and professional development programs for music instructors. In 2022, they changed their name to become the Berklee Institute for Accessible Arts Education, recognizing the broader conversation about labeling students with disabilities, and revising their notion of “special needs” by including all students who could benefit from accessible arts education (Berklee College of Music, 2025).

3.2. Designing Music Programs

In the United States in 2015, a law called the Every Student Succeeds Act (ESSA) was signed by President Barack Obama. The objective of this act was to replace and update the No Child Left Behind Act (NCLB) which was signed into law in 2002. According to the statement of purpose in ESSA, “The purpose of this title is to provide all children significant opportunity to receive a fair, equitable, and high-quality education, and to close educational achievement gaps” (ESSA, 2015). As a result, there was an increase of “special needs education” programs for students with special needs in all areas of education, including music, which positively impacted the number of students involved in music education programs. However, many music educators do not have a full understanding of their students’ disabilities and feel unequipped to present musical concepts to “special needs” students. This conversation was already trending before the NCLB was signed and is still relevant today:

The inclusion of students with disabilities into school music programs requires that music educators be prepared to create a learning environment that varies with the needs and abilities of their students, as well as one that fosters positive relationships among students. (...) Few music educators reject the underlying

philosophy of an inclusive education for students with disabilities; however, debate continues over the advantages and disadvantages of its implementation. Proponents of inclusion believe that total integration reflects the moral and ethical values of our society and fosters understanding and appreciation for individual differences. Other advantages of inclusion are that it minimizes the deleterious effects of labeling children, segregating them on the basis of their disability, and placing them in an environment that is inconsistent with the real world. Educators who argue against inclusion contend that regular classroom teachers are not trained to work with students who have disabilities and often have negative attitudes about teaching students with disabilities that results in the students' isolation and stigmatization. Other disadvantages that have been cited are that student with special needs demand excessive amounts of teacher time, impede the progress of other students, and often fall further behind without the services provided in the special classroom. (Johnson & Darrow, 1997, 174)

The issue is the lack of training of music educators and budgets assigned to adaptations. Despite these constraints, researchers have led experiments to highlight the benefits of special needs education programs on children with complex disabilities. For instance, in the UK, Dawn Rose, Alice Jones Bartoli and Pamela Heaton have followed students enrolled in such music programs and measured the impacts in terms of methods, musical aptitudes, memory scale, movement assessment and behavioral assessment. Their study presents very positive results for the children following the programs:

Music-based interventions have been shown to improve spelling in children with dyslexia and to increase social responsiveness in children with autism spectrum disorder (ASD). Developmental disorders frequently show overlap in terms of diagnosis and impairment, and this may be further complicated by symptoms of developmental delay (e.g., sensory, memory, cognitive, motor, and language difficulties). For example, low motor competency is characteristic in both ASD and attention deficit hyperactivity disorder (ADHD). Though such difficulties may impact musical learning, the development of motor skills using musical intervention has been successful. For example, in neurologic music therapy, (...) rhythmic entrainment can be utilized to optimize motor planning and execution (alongside applications to cognitive, speech, and language rehabilitation). (Rose et. al., 2018, 72)

Another team based in the UK, Susan Hallam and Evangelos Himonides, published their findings after years of research on the topic of the impacts of music activities on the intellectual, social and personal development of children in a book called *The Power of Music: An Exploration of the Evidence* (2022). Among other topics applicable to adults, their work gives examples of study cases demonstrating practices of inclusion of students with disabilities in the music classroom. They use neuroscience to study the effects of music learning on the brain, highlighting three cerebral zones which are the ones used in Universal Design for Learning strategies, seen earlier in this dissertation. They look at aural perception and language skills on young music students, showing that music education increases the reasoning and memory capabilities of students with special needs. In their section about students with auditory or language impairments, they demonstrate that music education can foster the identification of speech sounds and patterns, which, in turn, enhance language skills (72-76). Moreover, rhythmic and pitch perception help develop reading skills (100). The use of music therapy is also well covered, especially for children with emotional and behavioural difficulties (342-347), describing experiments which led to more engagement of the students, and reports from teachers indicating improvement in students' social development and overall attitude. One study particularly interested me, demonstrating that educational programmes in music composition and learning to play an instrument increase self-esteem in children with learning disabilities and developmental disorders (390-391). This program took place in a mainstream school and included public performances. It showed the benefits of mixing students with and without disabilities, which increased participation and collaboration in the music

classroom. I used a similar approach when I developed my own music program, detailed later.

The evolution of new technologies allowed the development of tools which can easily be integrated into music programs today. Popular among students with and without disabilities, online platforms and applications offering musical games give alternative methods of music learning, from basic music theory to exercises for instruments, or simply integrated MIDI instruments which can be controlled from an external device, by touch or by camera-controlled features, such as the AUMI instrument mentioned previously in this dissertation. Studies prove that students using these applications show enhanced reasoning and memory capacities. For instance, Spanish researchers Maria-Dolores Cano and Ramon Sanchez-Iborra (2015) looked at the use of information and Communication Technologies (ICT) in music education for children in Spanish language. After testing several tools, they chose one of the applications called PLAIME, and created a program open to 15 disabled children aged 8 to 17, along with music educators, delivered over a period of 10 weeks, to study the evolution of perceptual (easiness to handle the program, intuition), cognitive (attention, reasoning, memory, mood) and social (communication, interpersonal relationship, teamwork) skills of the students (262-267). The detailed results, analyzing quantitative and qualitative data, show that the use of ICT-based applications in the music classroom have positive impacts on the development of disabled students, even outside music lessons. However, they argue that several factors prevent the integration of ICT in mainstream music education, from teachers' knowledge of new technologies to budgets allocated to the music classroom:

Among the advantages of combining PLAIME with traditional music classes, we can point out that it could take advantage of common classes, since it is not

necessary to create special groups or to have children with disabilities as simple observers (listeners). (...) On the other hand, one of the main drawbacks to be taken into account with PLAIME, and which is common to most educational software tools, is the teachers' view on how ICT contributes to the learning environment. Traditional beliefs have a negative impact on the classroom use of computers; hence, the teacher should be the first person involved in addressing the problem in order to get successful results. In addition, other considerations of importance are the teachers' skills in using ICT [and] the teachers' (...) access to technology, not only the number of computers in the school but their location. In our opinion, to overcome these negative aspects some initial approaches could be adopted. For instance, teachers should be an active part in the development of ICT education tools, as it happened in this work; applications should be as simple as possible from the user's perspective. (Cano & Sanchez-Iborra, 2015, 274)

This article was written 10 years ago; thus, I trust that access to technology is less an issue nowadays but still exists. Two interesting aspects of their conclusion to me, which still apply today, are the fact that applications are not frequently used in traditional music learning, and that students with disabilities are not frequently integrated in the music classroom. One might influence the other. Cano & Sanchez-Iborra argue that it may be related to the fact that teachers might believe that these applications are either too complicated to use (for them or for the students) or not suitable to traditional music classrooms, although it could present an efficient way of integrating disabled students to mainstream music education.

I believe in the value of mixed curriculum, where students with and without disabilities can learn music together, and teachers can collaborate. Musical ensembles and choirs have a role to play in the inclusion of students with disabilities in music education. Through participation in music ensembles and interactions with ensemble directors, students can be offered a wide range of opportunities for social engagement. These collaborative experiences can support the development of social skills in students with disabilities, which may otherwise be affected by the lack of access or inclusion,

hence the lack of contacts with other children. I looked at examples of projects carrying the ideas of collaboration and inclusion in musical ensembles. Christine Lapka, a coordinating educator from the Illinois Music Educators Association, shared her research about a high school band composed of 29 student musicians including 13 disabled students, among which 8 with severe and profound developmental disabilities. The group participated in concert band performances, competitions, solo and ensemble contests, noncompetitive football half-time shows, and area parades. In this school, students with learning disabilities were fully included in all general education classes. In band, these students played various wind instruments. The eight students with severe disabilities from the special education class were in the percussion section, each having a different ability level. The special education teacher attended all rehearsals, which the band director planned and led. The special education teacher assisted her students in the percussion section by encouraging them to change instruments quickly, keep instruments quiet when they were waiting to play, and find the proper instrument. More important, she used e-mail to provide the band director with adaptations for reading and written work, suggestions for teaching methods, or ideas of how to handle behaviours. In her study, Lapka defined five criteria of a model program that successfully includes students with disabilities: positive teacher attitudes, collaboration, curriculum modifications, accommodations, and peer tutors. She looked at each criterion for both the band director and the special education teacher:

The special education teacher, who believed in the benefits of inclusion, reinforced the band director's attitude. In her view, these benefits were academic (a music education), personal (self-esteem), and social (integration). Music successes boosted self-esteem. She believed that general students and students in special education all benefited from social interactions. In addition, she understood how the teaching practices used with special learners could help all

learners. For these reasons, the special education teacher felt compelled to enrol the students in integrated activities. (...) To effectively include students with disabilities, curricula are often modified to fit the ability level of the students. Naturally, assessment is key to matching the material to a student's performance level. The band director in our case study was able to assess the ability levels of the students in previous general music classes and current band lessons. With their capabilities in mind, he selected appropriate instruments, altered percussion music, and chose suitable music. (Lapka, 2006, 56)

The issue of integration has also been explored for students with physical disabilities in music education. In the section about adaptive instruments for musicians with physical disabilities, I mentioned David Nabb who plays a one-handed saxophone. Nabb has collaborated with social psychologist Emily Balcetis to explain the benefits of including adaptive musical instruments in mainstream music education. They focused their investigation on issues such as: awareness of instruments meant to assist in the integration (teachers may not know that complex musical instruments can be made accessible to people with disabilities); problems experienced when attempting to do so (teachers who do know that adapted instruments are available may never have needed to locate instruments and may not know where to find them, or may have concerns regarding time to learn and teach the adapted instruments and the availability and the cost of the instrument, or may not know how to adapt repertoire to these instruments); and perceptions of the benefits of integrated music programs (for students with and without disabilities and music educators). They specifically explored whether band instructors believed integrated education would provide benefits, identifying the obstacles band directors encountered when attempting to integrate students with physical disabilities into instrumental music education. The analysis of the data supported the fact that the first

cause of exclusion of students with disabilities in their program was the lack of knowledge of the music educators:

Results of this extensive survey indicated that instrumental music instructors, and particularly those teaching in smaller schools, were not fully aware of the options available to students. In fact, respondents who were approached by families of the students indicated that one of the primary factors affecting their ability to accommodate such students was the awareness of options for how to include the students. Additionally, band directors were concerned about the availability of instruments, the cost of acquiring them, how or where to get them, or how to finance their purchase. (Nabb & Balcetis, 2010, 316)

They concluded their article by suggesting actions to help music educators think of possible solutions:

The results from this study indicate that band directors continue to face obstacles to integrating students with physical disabilities into instrumental music programs. We suggest the following steps that can be taken by individuals wishing to improve this situation: (a) Inform music educators of existing programs and devices to assist these students, and (b) lobby instrument builders and manufacturers to consider supporting development of instruments designed for persons with disabilities. In combination, these steps may help to improve the educational experiences offered to a population of students that currently appears to be underserved. (Nabb & Balcetis, 2010, 317)

An issue not mentioned in this study is the lack of framework when conceiving music programs integrating a mix of students with and without disabilities, which would help music educators find their answers on what to do and with what instruments. This also comes with the lack of knowledge, since the topic of integration of students with disabilities in the music classroom is rarely discussed.

3.3. Universal Design for Learning

A group of researchers in disability studies, Adam Patrick Bell, David Bonin, Helen Pethrick, Amanda Antwi-Nsiah and Brent Matterson, argued that this lack of

knowledge led to ableism, meaning discrimination, prejudice, or bias against people with disabilities, rooted in the belief that non-disabled bodies are superior, and effecting in negative assumptions and stereotypes. For them, applying a structured design aligned with the social model of disability would help music educators think of diverse options proposed to students in the music classroom:

The social model of disability – conceptualizing the experience of disability as a societal problem – has frequently been discussed in music performance studies in the past decade, but less so in music education; however, social model thinking is evident in the pedagogical practices of music educators who subscribe to the principles of universal design for learning (UDL). (...) We posit that such a perspective is pertinent to education because it is student-centred in an UDL-esque spirit; it questions and criticizes the systems in place with the aim of bettering them. Yet, educators must be careful not to deny the realities of learners' lives, such as the complexity of embodiment, and their disability identities. (Bell et. al., 2020, 659-660)

Based on Universal Design, discussed earlier in this dissertation, Universal Design for Learning (UDL) engages educators to create curriculums open to a broad variety of students' needs, from language to format and delivery. The Center for Applied Special Technology (CAST) offers UDL guidelines and resources to improve and optimize teaching and learning, based on the “why,” the “what” and the “how”:

The CAST UDL Guidelines help educators address the diversity in learning in three main categories:

- Engagement (the why of learning): recruiting interest, sustaining effort and persistence, and self-regulation.
- Representation (the what of learning): perception, language and symbols, and comprehension.
- Action & Expression (the how of learning): physical action, expression and communication, and executive function. (CAST, 2025)

The guidelines are open and flexible by design, offering a variety of options for teachers to represent knowledge and engage students across different activities in the classroom,

and for students to express their learning. The music educator Juliet Hess, who also works with disabled students, shared her experience of using UDL in her music classroom, based on the three categories defined in the guideline. The “Representation” category relates to the way educators teach their class. Teachers give students diverse representations of the subject taught. In music, instead of Western standard notation, Hess suggests the use of aurality since the nature of music is aural, or the creation of personalized language and symbols associated to music, or colour-coded notations, to name only a few.

Representation allows teachers to think creatively about how they represent knowledge by considering perception, language and symbols, and comprehension. When teachers creatively consider the full range of possibilities for representation, it becomes more feasible for students to access knowledge in ways that draw on their strengths. (Hess, 2023, 23)

The “Action & Expression” category is the student’s delivery of an assignment or an exercise. Teachers encourage students to share their knowledge through actions, using various methods for responses, which take the form of oral or written communication, but also the use of technology and multimedia. Hess recommends giving students the choice between written, aural and kinesthetic expressions of their knowledge, making them more independent in their actions.

Action and expression involve providing diverse opportunities for action, expression, and communication and different approaches to supporting executive functioning. Varying possibilities for action and expression allow students the opportunity to share knowledge in areas of strength and to direct their own learning in the tradition of assets-based pedagogies. (Hess, 2023, 24)

For instance, students could be offered to make a video or audio recording of an assignment. The “Engagement” category is the continuous discussions and exchanges

between the student and the teacher. UDL encourages teachers to provide options for self-regulation, set clear expectations bringing motivation such as self-assessment and reflection.

Varying modes of engagement also involves offering options for sustaining effort and persistence through making the salience of goals and objectives transparent, varying demands and resources to optimize challenges, and fostering collaboration and community. (Hess, 2023, 24)

In music education, Hess stresses the importance of significant opportunities for collaboration and community in performance and creative work such as composing and songwriting. Although she is deeply supportive of UDL, Hess warns educators against the necessity for teachers to think through the full range of contingencies, which in UDL is called “predictable learning variability.” UDL preconizes educators to “guess” and “imagine” the needs of a diversity of students to build their curriculum. Hess argues that students with disabilities are not always included in the overall imagination of a classroom, especially by educators who never worked with disabled students before and who mostly rely on assumptions of what someone with a disability can or cannot do. This is problematic when it comes to designing a curriculum supposedly usable by all, since the lack of knowledge and understanding of disability might lead to the exclusion of disabled students.

Chapter 4. Making Music Education Accessible: A Case Study

In my desire to explore ways to better consider disability in music education today, I applied for the Helen Carswell Chair in Community Engaged Research in the Arts, which consists of a partnership between York University's School of Arts, Media, Performance and Design (AMPD) and Community Music Schools of Toronto (CMST). Every year, the Helen Carswell Chair supports community music projects, programs and studies which can be realized at CMST. Located in Regent Park and Jane & Finch, two lower-income neighbourhoods in Toronto, CMST is "a registered charity that gives children and youth a rich and rewarding music and social education, by removing the financial obstacle" (CMST, 2025). Hundreds of children have received free music education each year in the form of scholarships. Students work with a team of music professionals and administrators. In addition to individual or group music lessons, they are offered opportunities to attend music workshops organized by partners, and to perform in diverse venues in the city. CMST celebrated their 25 years of activity in 2024.

In 2022, I was awarded a grant for my project titled "A Discovery of Adaptive Instruments," a project about disability in music education at CMST involving conversations with students, teachers, staff members of the school, parents, and different partners who contributed to the project. Students in the Jane & Finch school discovered adaptive instruments and voice in a series of workshops. This section gives details about the design of the program, the observations of the participants, and the results of the study.

4.1. Frameworks and Design

Before delivering workshops, I had to conceive the program in a way that would bring result on the research side, the teaching side, and the learning side. I was expecting different outputs and results for each area. On the research side, the activities needed to be innovative but also take into account the experience of the musicians I interviewed, with the aim of avoiding some of the issues they faced. On the teaching side, activities proposed needed to be easy to implement and as affordable as possible. On the learning side, the activities needed to be enjoyable, interesting and engaging, but also different from regular musical exercises traditionally proposed in classrooms. These anticipated results shaped the project.

I decided to use principles of the Social Model of Disability, changing the environment and societal attitudes to promote inclusion and equality for people with disabilities. I also used Universal Design for Learning to design a course providing options and engaging with students. In addition, I looked at several educational theories. One of them immediately attracted me: Transformative Learning Theory, first penned in 1978 by Jack Mezirow, an American sociologist and Emeritus Professor of Adult and Continuing Education at Teachers College, Columbia University. Originally designed to be applied to adult learning, such as people deciding to go back to studies later in life, it states that transformative learning has three dimensions: psychological (changes in understanding of the self), convictional (revision of belief systems), and behavioral (changes in lifestyle). To get transformation, several paths are possible:

Transformations may be epochal (involving dramatic or major changes) or incremental and may involve objective (task oriented) or subjective (self-reflective) reframing. In objective reframing, points of view are changed when we become critically reflective of the content of a problem or of the process of problem solving. A frame of reference is transformed when we become critically

reflective of the premise of the problem and redefine it. In subjective reframing, we become coauthors of the cultural narratives with which we have been inscribed. (Mezirow, 2010, 23)

Mezirow considers transformative learning for adults as the process by which we learn to recognize, understand, and challenge or act on taken-for-granted epistemic assumptions supporting our beliefs, values, preferences, and self-concept. What if we apply this transformative learning approach to children? Children learn from their parents at home and their teachers at school. Like adults, they are influenced by their work and life environments. They make their own assumptions. I believe that transformational learning would be beneficial for children as well, in order to prevent or break assumptions.

Moreover, since they bring their experiences home and tell their parents about their perspectives, these transformations could be passed to the parents. Since disability is rarely mentioned in the context of music, I want to educate children with the idea that their parents' assumptions on disability can be transformed. Of course, I do not want to assert that all parents and all children have negative assumptions about disability, but by considering these workshops as transformative learning tools, I hope to shed light on positive practice that would change the students' perspective about music performed by people with disabilities and introduce new experiences for those who never heard about disability in music. Also, it is important for me that teachers join their students in these workshops. Transformative learning has to happen at all stages, and for everybody.

No documented sources of the application of Transformative Learning Theory to children were identified. This theory assumes that the individuals participating in activities should be capable of critically reflecting on their experiences and assumptions, which is not always the case for children, depending on their age. However, it is possible

to observe how the brain of participating children changes, and how they develop their own reflections after participating in activities. This is why I wanted to use this approach.

Using the conversations I had with disabled musicians about their education, and keeping the three frameworks mentioned above in mind, I conceived a series of guidelines for teachers who wish to include students with disabilities in their mainstream programs and offer material available to all:

- 1) Evaluate what students know about disability in music: do they have any pre-conceived idea? How do I talk about the topic with students?
- 2) Make them participate in the learning: what would be the most beneficial for them in terms of activities? The workshops should be fun and impacting at the same time.
- 3) Ensure they understand what the activities are about, let them ask questions.
- 4) Let them become the teachers to others: they should showcase what they learned or have some kind of output.
- 5) Transmission: what did the teachers learn? These workshops should be carried on, and easily reschedulable.
- 6) Lessons learned: what did I learn? What can I change or improve?

In details, here is the intention behind each point:

Evaluate what students know about disability in music: This implies that music educators work on their own knowledge about students and musicians with disabilities before designing their course, so that they can learn for themselves but also be prepared to answer potential questions by students, administration and colleagues. They could read books, look at videos or online content, listen to podcasts, ask questions to people who experienced adapted music lessons as a student or a teacher, or other related learning streams. Transformation happens on all sides, with learning and transmission of the

knowledge. This preparation corresponds to the Engagement part of the UDL process (the “why”), giving ideas based on interests, identities, effort, persistence, and emotional capacity. It can then be applied to the classroom curriculum by proposing a knowledge discussion or activity to students. For instance, in a music classroom, think of topics such as adapted and adaptive music instruments, or musicians with disabilities active in the music scene today, or alternative musical notations.

Think of ways to make them participate in the learning: Consider multiple options of activities triggering knowledge, depending on the context and setting of the classroom. For instance, for a music classroom, it could be a group discussion, a presentation, a songwriting class led by students, or an ideas box available in the class. Take into account the way you will use these options in your curriculum. Find enough varied ideas to cover the full period of time assigned to the class, the workshop or the activity.

Ensure students understand what the activities are about: This step brings a transition between the design phase and the application phase. Once the design is done and an activity is proposed in class, make sure everything is clear before and during the activity. Allow time for questions, organize a Q&A, ask students what they understood about assignments or exercises, write details about the activity on a white board or paste them on a wall, navigate between discussion groups to propose help in case students need guidance, offer a framework for them to follow, give them a variety of resources such as written, audio or video content, and consider using non-auditory and non-visual sources to give them several options. This is related to the Representation part of UDL guidelines (the “what”), considering perception, language, symbols and building knowledge.

Let them become the teachers to others: For the delivery of an assignment or the action part of an activity, students could decide if they want to share their production only with the teacher or with the rest of the class. They could choose their mode of communication, for instance they could write an essay, or they could sing a song or compose a piece of music and explain how it relates to the assignment. Teachers can propose students to become a conductor for a given time and lead the rest of the class in a musical exercise, or they could explain how they experience music to their classmates. Be open to possibilities students offer. In UDL, this is the Action & Expression part (the “how”), promoting interaction, expression, communication and strategy development.

Transmission: By organizing workshops and activities, students and teachers should learn from their experiences but also transmit their learning and findings to others. There must be an evaluation system for the students but also for the success of the activity for the teacher. For students, evaluation can be based on the level of transformation (aligned with Transformative Learning Theory) by observing what they do with the information or training they received, or by surveying them on what they thought of the activity. There might be communication to the parents from the teacher to make sure the conversation continues at home. For teachers, evaluation could be based on personal feedback about what could be improved in the teaching process of an activity or a workshop, but also on the level of understanding and knowledge acquired by colleagues. If the exercise is a stand-alone activity, how can it be prolonged? Teachers must work with their administrations and peers to ensure continuity.

Lessons learned: This part is inspired by project management strategies. A project is not considered to be finished before a lessons learned meeting, self-assessment or

report is delivered. The lessons learned document contains details of the activity with objectives and results, a list of evaluations, and some suggestions for improvement for the next occurrences. This document is a tool for transmission and continuation of the activity.

I followed this framework to create the series of workshops I wanted to implement at CMST, from the design to the lessons learned. Details about the design and the Lessons Learned document are presented later in this chapter.

4.2. Workshops

One of the key aspects I wanted to address with these workshops was the diversity of possibilities that exist when we think of disability in music: reading scores, playing an instrument, singing, using rhythm patterns, feeling vibrations, controlling digital instruments, a combination of all of the above. I also wanted to create activities that would work with several age groups. Prior to the design, I had a discussion with the administration of the school to determine what groups would be included (age, instruments, schedules). We opted for: the Musical Beginnings class (ages 6-8), the Intermediate Jam session class (ages 9-13) and the Choir (ages 11-16). I then contacted the teachers to know more about their students, brainstorm ideas, and discuss the schedules. Once preliminary meetings were complete, we agreed on a schedule: all sessions were set between February and May 2023.

I then had to work on the design of the content for each activity. The workshops consisted of four discovery sessions with presentations and Q&A, three practice sessions with reviews of discovery sessions and practice, and a final performance to present a

work in relation with what was learned during the workshops. Each session was one hour long. For each group, I combined a discovery session (during which the students could discover the instruments) and a practice session (during which we were practicing and creating a tune). The final performance was a result of the practice sessions. The design of the workshops was shared with the administration of the school and the teachers, with room for discussion and questions, so that everybody understands and agrees on the content. Now that the design and the scheduling phases were complete, the next step was the delivery, detailed hereafter. Participation to the workshops was voluntary. Students had to register and sign a consent form.

The first discovery session was divided into two parts: a Braille Music score reading workshop, and an American Sign Language (ASL) Music singing workshop, held on February 22, 2023. Prior to this date, I had worked with two partners to prepare the activities. For the Braille score reading session, I worked with the Canadian National Institute for the Blinds (CNIB) in Toronto to find a suitable score for the students. I chose the Disney tune “A Whole New World” from *Aladdin*, which was already available in Braille Music but needed to be printed, which took a few weeks. I learned the basic principles of Braille Music reading, not with the intention to become a fluent reader but I needed to have enough knowledge to properly explain the method to the students. I also prepared printed material with a basic chart explaining how to read the music notes, that they could bring home.

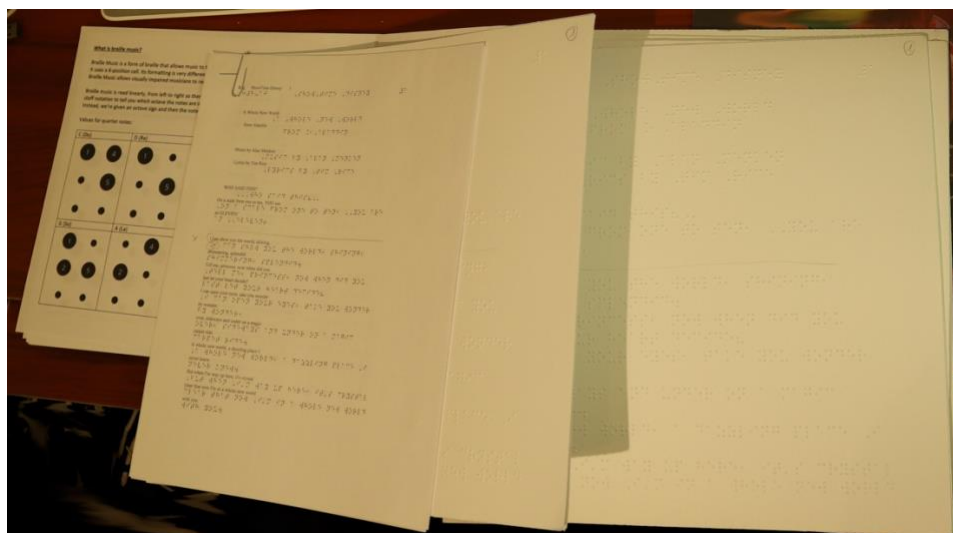


Figure 32 - Braille Music scores of "A Whole New World"

and Braille Music reading chart. Photo by the author

Figure 32 shows the material I brought for the workshop. The scores came with both the music and a lyrics sheet, both of which contained tactile Braille notation. During the session, we first went through the audio recording following the lyrics (in the middle in Figure 32), and then again following the Braille Music score with fingers (on the right in Figure 32). The chart I printed (on the left in Figure 32) showed the position of the raised dots corresponding to music notes. There were no questions from the participants, but they enjoyed the experience. I encouraged them to take the chart with them and try to follow the song with it at home.

For the second discovery workshop, ASL singing, I invited an expert. Before the workshop, the choir teacher and I decided on a song: the teacher told me they had just sang “The Greatest” by Sia, and we both thought it would be easier for the students to work with a song they already knew. I hired Gaitrie Persaud (today Gaitrie Persaud-Killings), a Deaf ASL coach and ASL Music performer based in Toronto (seen with me

in Figure 33). She founded 'Phoenix The Fire', a theatre community hub providing workshops and resources and facilitating partnerships to leverage Deaf artists. She is known for her role as Simmi in *Silly Paws*, a mini-series for children in ASL available on the CBC Kids program, on CBC Gems, since 2022. She is active and well-recognized as an ASL Music performer on the Canadian scene. I first asked Gaitrie to create a video of her signing the song in ASL, which I could use later. I also asked her to come with her ASL interpreter, Timothy Keslick, to lead the discovery workshop. It was interesting to see the students' interactions with her. When Gaitrie went through the song and explained in detail what vernacular ASL (visual representations of sign language based on storytelling principles) used in ASL Music was, they were very attentive. When the Q&A time had arrived, they were first shy, then they asked their questions to Timothy, the interpreter, instead of Gaitrie (i.e. "Can you ask her how she sings in ASL in a concert?"). Timothy explained the role of the interpreter, which is only to translate messages between ASL and English, and told them that questions should be asked directly to Gaitrie. Only one participant had interacted with someone Deaf before the workshop (one of the students had a relative who was Deaf). None of the participants knew that ASL Music existed. The questions asked were about the role of ASL Music performer, the way Gaitrie felt music with vibrations, if she could vocally sing what she signed, if she could hear something; questions were also asked about the meaning of vernacular sign language, how she found her signs when performing the lyrics, and how long it took to practice. Participants consisted of students but also the two teachers leading the choir and the administrator of the Jane and Finch location, where the workshop took place. Students, teachers and workshop leaders enjoyed their time together.



Figure 33 - Gaitire Persaud (left) and Diane Kolin (right)

Photo from the author's collection

The ASL Music singing discovery workshop was followed by a practice workshop, which was held on May 24, 2023. We used the material we worked on with Gaitire, including the video. Participants of the discovery workshops who wanted to rehearse the song were invited. The aim was to prepare a showcase at the end of the term.

On February 18, 2023, I undertook an experiment. I proposed to my class of ECM (Early Childhood Music), which I was co-teaching every Saturday, with children 4-5 years old, to sing an easy song in ASL. The trend song of the time was the children's song "Baby Shark." It is a simple song, with a few words, and I wanted to use it to explain Sign Language singing to the children. I learned the ASL Music version and taught it to the students, who were full of energy and memorized the song in ASL Music

like any other dancing and moving activity. By the end of the session, they all aligned, and we sang it all together. Without realizing it, it was their first experience of sign language, and of ASL Music. I am not unsure of what they will remember of the experience, but since children that age learn fast, it would be possible to include ASL Music as a regular way of singing with movements usually proposed in ECM classes.

I held the third discovery workshop with the Musical Beginnings class on May 11, 2023, with children aged 6 to 8 years old, with the help of the co-teachers of the class. For this workshop, I brought a dozen of iPad tablets with the AUMI instrument installed, which was described earlier in this dissertation. I also brought two Theremins⁴³ and three Tenori-On.⁴⁴ After I introduced the idea of playing music with different parts of the body, we explored possibilities of playing non-traditional instruments. The workshop was based on instruments played without touch or with different touch. We used improvisation techniques, so that all children get the opportunity to play all available instruments in the room. In the feedback I received after the workshop, they told me they were curious about the Theremin but found it difficult to use. It is indeed complicated to understand how to manipulate patterns with the hands and produce a stable sound on a Theremin. Still, since the aim was to play an instrument without touch, improvising on it and trying to get interesting sounds and movements, it filled the criteria, but it was not the preferred instrument. Students liked finding rhythmic patterns with the Tenori-On (see Figure 34). It was easy enough for them to understand how to use it at their age. We played it only as a drum-set but if I had to propose this discovery workshop again, I might explore other

⁴³ A Theremin is an electronic musical instrument manipulating sound waves, controlled without physical contact by the performer.

⁴⁴ The Yamaha Tenori-on is an electronic musical instrument that allows connections between devices and manipulation of sound patterns. In the workshops, we used it as a drum set.

options it offers. The most successful instrument was the AUMI. Not only is it easy to use, but it is also easy to customize. They were quick to grasp how to change the settings, the instruments, the grid, the size of the controller, even the colours. They invented tunes and were enjoying themselves, dancing in front of the screen.



Figure 34 - Students and Diane around two Tenori-On

Photo from the author's collection

Since students of the Musical Beginnings class are young, I wanted to hold the practice session shortly after. It happened two days later, on May 13, 2023. All participants in the discovery session were invited, in addition to a class normally occurring at the same time with students of the same age range. We first did a jam session to remember the touch and feel of each instrument in the room. During the Q&A, students had questions about disabled musicians playing other instruments; they also wanted to know what else could be done with the AUMI instrument; I asked them to share their experiences. After the Q&A, I asked them to choose one instrument to create a piece of improvisational music that could be featured at the final concert. If the AUMI

was initially their first choice, because of its ease of use and variety of digital instruments, when all of them used a tablet at the same time, it quickly became very noisy in the room. On the one hand, they adapted very quickly to an instrument which can be controlled with the eyes. On the other hand, they were focused on their own productions without paying attention to what others were doing. Students agreed that it would be difficult to play together with just one hour of practice. The final choice was the Tenori-On, easier to set up for a group and to get a result after only one hour of practice. I conducted them like a marching band, giving them signals, and they were able to create a piece together, listening to each other and proposing their own ideas. The objective was for them to use one of the instruments and create a piece as a group, which they successful did.

The discovery session with the Intermediate Jam class took place on May 12, 2024, with children aged 9 to 13, and their co-teachers. The aim was to explore other ways of playing traditional instruments. There was a lot of group-thinking and testing. There were two guitar players in the room so I asked them what would happen if they were to play with only one arm. Feet was an option, but by playing together, they both used one of their arms on one single guitar. They also both tried to play the guitar with their feet. I showed them videos of two American armless guitar players who play with their feet: Mark Goffeney and George Dennehy. There was also a drummer who tried to play a snare drum with her feet. I showed her the video of the Canadian armless drummer Alvin Law. After a few minutes of practice, she could beat a strong rhythm with her feet. We did the same with the piano. All participants could try all instruments.



Figure 35 - Demo of the connected gloves

Photo from the author's collection

The practice workshop, on May 26, 2023, happened to become an extended discovery session, for two reasons: first of all, it is a Jam session class, they improvise together and have no specific piece of music to play; second, the previous discovery session left room for discussion but not enough room for playing the instruments. In the second session, I also brought some iPads with the AUMI, and a pair of connected cuffs similar to the MiMu gloves, which enables the manipulation of music patterns like a Theremin but with a connected app. We took the time to play and to jam with all the instruments. Figure 35 shows a demo of the connected cuffs.

The end-of-term performance occurred on June 16, 2023, in a concert hall at York University. Three members of the Musical Beginnings class performed on the Tenori-On (see Figure 36). Like in the practice session, I conducted them with cues, and they improvised. We were accompanied on the drums by my co-teacher of the ECM class.



Figure 36 - Students improvising on the Tenori-On

Photo from the author's collection

Four students of the ASL Music singing group performed “The Greatest” by Sia in ASL Music (see Figure 37). This was a real discovery for the parents of the children attending the concert, but also the teachers and some of the administration members who had heard of the workshops.

After the concert came a period of gathering feedback. Since it is easier for children to talk about what they think of an activity directly after it, most of the feedback from the students was given orally. I prepared some forms to guide the feedback, which children could fill, either with the help of their parents writing down the answers, or directly with me. Filling these forms was optional. I also received feedback from the teachers who collaborated with me during workshops and thanks to whom all workshops went smoothly. The most interesting one was from the choir teacher. He wanted to work with me on learning other possibilities of ASL Music songs.



Figure 37 - ASL Music singing group

Photo from the author's collection

4.3. Evaluation

I evaluated the workshops based on objectives criterion, analysis of comments received from participants, and transmission actions. Objectives were reached in all of the activities: students discovered basic Braille Music, sang in ASL Music, explored different ways of playing adapted and adaptive instruments, and improvised as a group to create a piece. Comments showed an enthusiastic interest for all activities proposed, and a willingness to come back for other sessions if it could be organized. If the project was successful in terms of participation, it was also positive in terms of transmission. Based on my experience, some of the students might have discussed the workshops at home with their families. My discussions with parents during the final performance confirmed this fact: some shared with me that they were positively surprised by the works presented

by the students, were happy to learn about adapted and adaptive instruments, and enjoyed the fact that their children could experience them.

The three frameworks I chose to build the program were effective. The design itself, with its variety of activities and outputs from the students, was inspired by principles of Universal Design for Learning. The article written by Juliet Hess, the music teacher who wrote about her own findings using UDL, presented in the previous chapter, was helpful. Her only concern with this method was the fact to leave music educators to “guess” or “imagine” the needs of students with and without disabilities in the classroom. Since I know by experience how to create adapted and adaptive environments, the workshops are flexible enough to accommodate all needs. Every student could participate if they wanted, and the way they wanted. Integration is an important aspect of these workshops, following principles defined by the Social Model of Disability. Transformation set as a goal of the Transformative Learning Theory approach occurred in the classroom thanks to conversations with the participants during and after the workshops. In class, students were curious, asked questions, and acquired new knowledge in a short time. The output was presented as a final result during a concert. The feedback collected after the concert also show that they enjoyed the process. Parents who attended the concert shared with me that they also learned something new, particularly seeing their children sing in Sign Language. The teachers were also transformed by the experience, accepting to change their habits to include new teaching methods enjoyed by their students and themselves, and creating a Lessons Learned document to serve as a guide for future implementations.

Many interactions with CMST administrators and music educators happened during the school year. I was involved in two projects: a special show of their video podcast called CMST Talks, and a professional development session. CMST Talks is a series of 15 videos of conversations and knowledge sharing within the CMST community, hosted by the jazz pianist and composer Thompson Egbo-Egbo. It started in March 2021 and ended with my episode, in December 2022, which had been recorded in November (see Figure 38). Since the episode was about showing different aspects of music performed by artists with disabilities, I brought two colleagues with me: Kris Halpin and his Mi.Mu gloves, and Precious Perez, a singer, songwriter and ukulele player who is blind, and who at the time just became the vice president of RAMPD.



Figure 38 - Thompson Egbo-Egbo and Diane Kolin

CMST Talks 15 - Community Music Schools of Toronto 2022

The episode lasted more than an hour. I presented myself as a teacher at CMST, a singer, and a disability rights advocate. We discussed the definition of disability, what the Social

Model is, and where disability in music stands. Kris and Precious also presented their work and their own vision of disability in music. I then presented the workshops that would happen a few weeks later at the school. We concluded by discussing what music educators can do to highlight the work of musicians and composers with disabilities and design music lessons accessible to all. The episode is available on the YouTube channel of Community Music Schools of Toronto (CMST, 2022). The publication of the video already initiated conversations with music educator colleagues about connected gloves and performances by disabled artists they knew.

More conversations followed quickly after the CMST Talks interview. Faculty members have to attend monthly professional development sessions, with a different topic every month. I was asked to lead the accessibility in music session in November 2022. After an overall discussion on global considerations about disability, we talked about disabled artists and their works, such as Lachi, Gaelynn Lea, Adrian Anantawan, Kris Halpin and George Dennehy; a conversation about performance techniques used by musicians with disabilities followed, during which we talked about digital and physical instruments, adapted and adaptive instruments; we reviewed different teaching techniques, for instance teaching with non-traditional instrument, and teaching a student with autism or with a disability having specific access needs; finally, I directed an activity: in order to give them an idea of what would happen during the ASL Music workshop, I taught the group how to sing “O Canada” in ASL Music, which I was taught myself. This is an example of transmission. As I said previously, transmission is a form of music education. We went through the lyrics with sign language, and then we sang the entire song together with an accompanying video of an ASL Music performer. I

encouraged them to contact me if they had more questions about the upcoming workshops or ideas to share. These conversations with music educators are good practice. It gives them the opportunity to ask questions, aligning with the transmission objective of the workshops which I consider as successful.

However, the most rewarding transmission action came from an instructor who took a personal undertaking: not only did the choir teacher decide to teach his full group how to sing “The Greatest” in ASL Music after the workshop, but he also worked with an ASL Music interpreter to lead the choir to sing “O Canada” with sign language at the Scotiabank Arena for an opening game of the Raptors. I have nothing to do with this initiative, except that the workshop itself gave enough appetite to the teacher to continue his own path.

In terms of transmission, what failed was the continuation plan. In the following months, we met with the director of CMST, Richard Marsella, to try to find funding streams for other workshops, but we were unsuccessful. These workshops have a cost: the budget must include the workshop organization meetings with teachers and administration, the equipment to purchase, the experts to hire, the staff salaries, and costs related to change of schedules to bring the children together.

For me, the project was very successful. Participants provided positive feedback: the students enjoyed the workshops, the teachers learned with their students, conversations about accessibility happened before, during and after the workshops. Most importantly, a common Lessons Learned document based on the teachers’ feedback was created to serve as a source for future implementations to continue the conversation about the importance of accessibility and inclusion in the classroom. This document proves that

these workshops could help mainstream music classrooms create activities open to students with and without disabilities playing and singing together. At a personal level, I also acquired an expertise in organizing workshops that was ready to be used again in the future.

4.4. Lessons Learned

This section synthesizes what music educators learned from this case study. The feedback comes from music educators and was collected after the workshops. Five main topics were discussed:

1. Assumptions: Do not assume that the student cannot play music. The student came to the music school to learn how to play or sing. A blind student hears. A deaf student feels and sees. A mobility impaired student knows what they can do or not do. Find a way to work together. Talk to the parents to know more about what type of disabilities the student has, and what the student has done before. You might need to do so with the administration of your school. If not, let them know what you are doing. If it helps, come up with a structured plan: what is the aim of the student for the year, what are the learning outcomes you want to accomplish together?

2. Access needs: Each student has different access needs. If the student has a physical disability, find the appropriate instrument. If the student has a sensory disability, make the student feel or touch in another way. If the student has an emotional disability, have a conversation to understand what makes them feel good. Sometimes it can be as simple as a break during the lesson. Invisible disabilities also exist. In any case, take the time to talk with each student to discuss access needs. Students who have disabilities are the best experts to talk about their own needs.

3. Inclusion: As an educator, think outside the box. Ask yourself questions. How can you integrate the student to an instrumental ensemble? Do you need to build a custom-made instrument, meaning an adapted instrument? Are there simple adaptations you can work on with the student, with easy material such as tape and boxes? If not, what kind of help do you need for the next steps? Before reaching out to some engineers, talk with the student about adapting an instrument for him. Trying to surprise a student is nice, but you want the result to be efficient and fitting the needs of the student. Know that it might come with a cost, what are the funding options? Is the school willing to help? Know that you might try several versions of the adapted instruments before it works. How can you integrate the student to a choir? What kind of appropriate equipment is needed? A Braille Music score? A bass speaker to carry vibrations? A chair? How can the student perform in public with the other students? Is there a need for an ASL interpreter for the student and/or the family in the audience? Is the venue aware that a guide dog will attend? Make sure that the venue knows that a guide dog is a service animal, which is legally authorized. Are there tactile markers on the ground of the venue? Is there a quiet room, with fidget toys or any accessory needed to comfort? Find your own questions related to your student's access needs and write them down. Run the checklist every time you need to.

4. Teacher-Learner: Learn with your student. If the student plays differently (with another part of the body, in another position), play the same way with the student. If the student reads a score with Braille Music, learn Braille Music. If the student has hearing impairments, teach and learn a Sign Language Music piece. If the student feels more comfortable on the ground, sit on the ground. Let yourself be surprised by the new adventure.

5. New instruments, new techniques, new technologies: This is related to No. 3. Consider trying new instruments with all your students, not only the ones with disabilities. If you want to try something low-cost, try the AUMI as a starting point, which offers multiple possibilities. Get some training before. It is easy to learn by yourself, otherwise contact an expert. When you are ready, ask your administration for a few tablets and stands. Create a band. If you have funds, try investing in an adaptive instrument that would fit the needs of your student. There are some connected gloves and cuffs, some digital harps and guitars. Riccardo Baldini, a paraplegic pianist of Edmonton in Canada, developed a system to activate piano pedals with a mouthpiece. Contact university labs and specialized organizations which are always willing to invent new instruments based on access needs. If there is none in your area, send an email to one that corresponds to what you want to achieve with the student. Ask your school if you could create a partnership. Are there students in the school who invent instruments or could come with new ideas for your student? Create collaborative groups.

This exercise based on experience feedback from peers and colleagues is easy to do when it is planned in advance and can be integrated to a Lessons Learned document which will be useful for potential future occurrences. Educators who do not know where to start have access to many resources for accessibility in music education which can easily be found online for inspiration. Music associations propose guidelines – for instance, the Ontario Music Educators' Association (OMEA) published their Equity Action Plan with resources and ideas to prioritize equitable and accessible music education (OMEA, 2020). Teachers and experts shared their experience and advice – for instance Bryson Tarbet's views on understanding access and accessibility in the classroom (Tarbet, 2024), or

Octagon Music Hub's curriculum planning resources on Inclusive Music Education (Octagon Music Hub, 2025). UDL (CAST, 2025) provides a framework which could be used as a starting point for course design. I encourage all music educators to try to use the already existing tools to create their own and contribute to the overall improvement of access and accessibility in music education by sharing their findings.

4.5. ArtsAby, a legacy project

As an educator, it is important for me to share – to transmit – my knowledge about disability and accessibility in the arts, inside and outside academia. The experience of leading the workshops at CMST and the research described in this dissertation led me to think of projects open to a mainstream audience, combining my historical research, my interview of artists with disabilities, and my desire to improve music education to increase the visibility and the integration of disabled musicians.

In February 2024, I launched ArtsAby, an online platform giving access to free resources including lists of books and movies about disability in the arts, in dance, theatre and music, and a podcast I host with interviews of artists, music professionals and scholars with disabilities across Canada and the United States, and other guests from Europe. It currently contains 52 episodes. This podcast is available in its audio version on ArtsAby's website and all major streaming platform (Spotify, Apple Music, Amazon Music), and in its video version on YouTube. All episodes have subtitles and transcripts. My objective is to grow these episodes to have them available in multiple languages. I now propose the workshops I led at CMST along with professional development, public presentations and other services, under the ArtsAby banner. I passed my certification to

become a Rick Hansen Foundation Accessibility Certification (RHFAC) Professional and now work with cultural venues to improve their building accessibility. I collaborate with music festivals and venues to create access guides for visitors and performers with disabilities. I consider myself as a disability rights activist, fighting with my knowledge, experience sharing, showcase and public debates opportunities, discussions with educators and disability studies specialists – bringing my contribution to the field to create a better, more accessible and more inclusive music industry.

Conclusion and Suggested Further Research

My thesis argues that music education is the key to a better inclusion of musicians with disabilities in society. This dissertation demonstrates that musicians with disabilities are not valued enough in the music industry. Students with disabilities lack role models to help them envision a possible career in music. The conception of efficient accessible music curriculums and the use of adapted and adaptive music instruments can help students have access to inclusive music practices, teachers to improve the overall accessibility of their classrooms, and professional musicians to become more visible as role models to younger generations. Visibility leads to accessibility. Schools who support the improvement of accessibility of their buildings and their programs can serve as examples to venues which need to become accessible to welcome disabled musicians on stage. Historical disabled musicians who have been forgotten or removed from music manuals need to be recognized. This dissertation presents the framework I designed and used to create inclusive and adaptive workshops, which has proven successful, and which could help many music educators in their exploration of options for a better integration of students with disabilities in their classrooms.

The models defined by Critical Disability Studies (CDS) presented in Chapter 1 are helpful to understand the issues people with disabilities face with regards to their integration in society. The definition of the term ‘disability’ itself is problematic. Some distinguish ‘impairment’ representing the bodily condition, and ‘disability’ referring to social obstacles. Some prefer to use identity first and choose to be called ‘disabled person,’ some prefer person first and favour the use of ‘person with disability.’ The way disabled individuals are seen and perceived depends on societal trends represented in CDS models. The two prominent models are the medical and social models of

disabilities, which oppose themselves. The medical model analyzes disability from a strictly medical and functional point of view, using bodily impairments as criteria to define disability. The social model states that people are disabled by society and the obstacles it imposes rather than by bodily impairments. It examines the entire person with their capacities, feelings, emotions, possibilities and social interactions with others. Our current society tends to use the medical model more than the social model, which causes the lack of integration and inclusion of people with disabilities.

The human rights model looks at issues related to equality, meaning that everybody is treated equally from the start but might have unequal output, and equity, meaning that everybody is granted tools adapted to their situation with the aim to achieve the same goal. The problem with the human rights model is that it privileges equality and not equity, because of the way that the human rights model has been historically implemented. Legislation created thanks to the human rights movements supposed to reinforce these rights is not always respected, creating more barriers to the integration of disabled people in society.

I looked at the application of the social model and the human rights models to musicians with disabilities. An equality-based approach is supposed to grant access to venues for all people with disabilities. When the venue claims they are accessible, it is usually the case only for audience members, not for performers, and most of the time, accessibility is created for wheelchair users but not necessarily other types of disabilities. The problem comes from the design. If accessibility was integrated in design and applied from the beginning, or for older buildings when construction work is planned, then there would be no issue. One solution is to adopt Universal Design principles, which include

equitable use, flexibility, intuition, perceptible information, tolerance for error, low physical effort, size, and space. That way, the venue would not only be accessible for people with disabilities but for everybody using the space.

The literature review presented in chapter 1 shows that the development of the interstition between CDS and music is recent. Music was the last artistic practice to be considered by scholars, probably because of the preconceived ideas associated with music in relation to sound only. The first texts analyzing musicians with disabilities with CDS models were written in the mid-2000s. The musicologists Joseph Straus and Blake Howe opened the path to new generations of scholars who wrote about a variety topics such as community, performance, race, gender, sexuality, war, trauma, mental disabilities, autism, and more, covering diverse musical styles. The intersectional field of CDS and music still grows today.

If Chapter 1 analyzed models and theories, chapter 2 gave examples of historical and current lived experiences of musicians with disabilities. It was important for me to use real narratives to understand the impacts of these models. Disabled musicians from the past and the tools and techniques they adopted to progress need to be recognized. Without them, the contemporary musicians I interviewed would probably not have had the same and music education they have today.

Blind musicians such as Conrad Paumann and Arnolt Schlick invented phonetic tablatures for the instruments they performed. Maria Theresia von Paradis used a compositional board to study music theory and to help her assistants transcribe her compositions. Louis Braille developed an adapted musical notation to read and write scores, which are still used today, for instance by the Al Nour Wal Amal orchestra.

Deaf musicians whose hearing loss came later in life, like Johann Mattheson and William Boyce, used to hide from society when their deafness became noticeable. The developments of tools such as the first hearing aids (ear trumpets) offered more options than written communication. Both techniques were used by Ludwig van Beethoven to stay connected with his friends and colleagues. Vibrating devices were installed on instruments to allow deaf and hard of hearing musicians to experiment the sound in other ways than auditory only, such as the Beethoven's Hearing Machine installed on his piano. Vibration and other ways of listening to music are still used by deaf musicians today, as Evelyn Glennie and Paul Whitaker told us.

Musicians with physical disabilities were historically absent among professional musicians until the emergence and evolution of medicine practices in the 19th century. Disabled people were seen as “abnormal” or “extraordinary.” “Freak shows” were showcasing “oddities,” until the shows were deemed immoral. The more recent discussions about medical and social considerations in CDS presented people with disabilities differently. In the 20th and 21st centuries, prosthetics replace missing or incomplete limbs, and wheelchairs and mobility devices prevent disabled people from staying at home. Examples such as Adrian Anantawan playing the violin with a prosthetic allowing him to hold a bow, or Gaelynn Lea using a looping pedal with her foot from her wheelchair, show the importance of adaptations, but also reaffirm that people with disabilities can become professional musicians by using these adaptations.

Tools and techniques from the past inspired new technologies from the present. Adapted and adaptive instruments have been invented to help students with disabilities learn how to play an instrument and how to progress. Transformed instruments such as

connected gloves or adapted flutes help disabled musicians who cannot play traditional instruments. Computers, tablets and phones can now control digital instruments.

However, these digital or physical instruments come with a non-negligible cost.

These costs not only affect disabled musicians, but they also affect adapted music education programs. Chapter 3 looks at the creation, design, evolution, and content of programs aimed to teach students with disabilities. Music education generally face a budgetary crisis. Lack of money is the excuse leading many adapted programs to failure. Even when legislation imposes schools to become accessible, even if ramps are built to allow wheelchair users to access the building, adapted music programs are rarely proposed to students with disabilities. Stereotypes about disabilities can lead to discrimination and create a less inclusive environment for disabled students. Educators and staff rarely receive training on disability awareness, duty to accommodate, or strategies for creating inclusive learning environments. When training is done, educators who are willing to create adapted programs do not know where to start. Some of the existing programs carry an idea of segregation by being labeled “special needs education.” All students have specific needs teachers need to address, regardless of disability. Music education needs more programs mixing students with and without disabilities to fully embrace the definition of inclusion.

Like buildings, these programs need to be designed with everybody in mind. The concept of good design is important. Based on Universal Design, Universal Design for Learning (UDL) engages educators to create curricula open to a broad variety of students’ needs, from language to format and delivery. The Center for Applied Special Technology (CAST) offers UDL guidelines and resources to improve and optimize

teaching and learning. The music educator Juliet Hess created an adapted music program following these principles. She wrote easy-to-follow implementation guidelines for music teachers.

I used the results and finding analysis from Chapters 1, 2 and 3 to create my own adaptive music education framework, which is presented in Chapter 4. Along with UDL, I applied principles of CDS's social model of disability, changing the environment and societal attitudes to promote inclusion and equality for people with disabilities. I also decided to adopt an existing educational theory called Transformative Learning Theory, which defends psychological, convictional and behavioral transformative learning. Usually applied to adults, I borrowed these principles to test my hypothesis about teaching by transmission: if children are transformed, they will tell what transformed them to their parents, potentially leading to both the child and the adult being transformed by an experienced lived by the child.

Based on my historical findings, the discussions with the disabled musicians I interviewed, and the three methods and models I chose to apply, I conceived a series of guidelines for teachers who wish to include students with disabilities in their mainstream programs. From these guidelines, I designed four workshops for a music school in Toronto, Community Music Schools of Toronto: Braille Music score reading, American Sign Language (ASL) Music singing, music instruments played without touch or with different touch (new technology workshop), and different ways of playing traditional instruments. Each classroom had different sizes, students age, and music educators. My aim was to teach the music educators how to deliver these workshops so that they could it

by themselves in the future. Feedback was collected from the students and from the music teachers after the workshops.

Several outputs were produced, all detailed in Chapter 4: a final concert for students to showcase the workshops, professional development sessions with the school for music educators and staff members, and a Lessons Learned document based on a learning reflection work made with the music teachers. Finally, my personal output, combining all the findings of this dissertation, was the opening of ArtsAble, with its services to promote the works of artists with disabilities and to offer free resources to educators curious to know more about disability in the arts, including a podcast featuring disabled artists.

If this experience of delivering workshops and transmitting my knowledge to students and educators described in this dissertation was successful, it is still not enough to fully address my thesis question. In order for this adaptive music program to be efficient, it needs to be implemented in different schools. It needs proper funding. It needs administrations willing to plan this program. It needs teachers eager to take the time and the energy to change their current programs to include students with disabilities. In a time of crisis for music education, what strategies should be adopted to make sure that accessibility is considered at the design level in future mainstream music programs? What is the role of Critical Disability Studies in the creation and the design of mixed music education curricula for students with and without disabilities? How can we ensure that music educators receive proper training to feel comfortable to work with a mixed

disabled and non-disabled roaster of students in different class levels? How could the cost of adapted and adaptive instruments be reduced?

In addition, several topics in this dissertation would benefit from more research. First, some of the tools and techniques I have used in my workshops might be considered as technoableism, which is the belief in the power of technology “that considers the elimination of disability a good thing, something we should strive for” (Shew, 2023, 7-8). I recognize that tools based on new technologies which are used to ease the process of music making, such as the AUMI, were conceived specifically for students with disabilities and might be seen as tools aiming to “fix” disability. It is not the way I have included them in my research but, depending on how they are used, it would be interesting to see how these tools evolve in the future in the context of music education. Second, Universal Design (UD) and Universal Design for Learning (UDL) present other challenges which I have not explored in this dissertation. For instance, the discrepancy between the original concept of participatory approach of UD (close to a DIY approach) and the application of contemporary legislations (such as laws imposed by ADA) might create some tensions and give arguments to schools not to support projects designed with UD models (Hamraie, 2017, 206-207).

This research comes with many unanswered questions, which I hope will continue to stimulate discussions about accessibility and inclusion for students with disabilities in music education.

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Appendix

Table 2 - Historical research - Musicians with disabilities from Medieval to Contemporary periods

Name	Disability	Gender	Year of birth	Year of death	Citizenship	Occupation	Musical period
Francesco Landini	Blind	Man	1325	1395	Italian	composer	Medieval
Conrad Paumann	Blind	Man	1410	1473	German	composer	Medieval
Jehan de Corduel and Jehan Ferant	Blind	Man	1434	1460	Spanish	Rebec and lute players	Medieval
Arnolt Schlick	Blind	Man	1455	1521	German	composer	Renaissance
Charles et Jean Fernandez	Blind	Man	1468	1498	Spanish Belgian	Violistes	Renaissance
Miguel de Fuenllana	Blind	Man	1500	1579	Spanish	Vihuelist and composer	Renaissance
Antonio de Cabezón	Blind	Man	1510	1566	Spanish	Composer and organist	Renaissance
Francisco de Salinas	Blind	Man	1513	1590	Spanish	organist	Renaissance
Nicholas Dáll Pierce	Blind	Man	1561	1653	Irish	Harpist and composer	Renaissance
Antonio Valente	Blind	Man	1565	1580	Italian	Organist and composer	Renaissance
Jacob van Eyck	Blind	Man	1590	1657	Dutch	recorder virtuoso, and composer	Renaissance
Pablo Bruna	Blind	Man	1611	1679	Spanish	Organist and composer	Baroque
Pablo Nassare	Blind	Man	1654	1679	Spanish	Music theorist, organist and composer	Baroque
Esther Elisabeth de Waldkirch	Blind	Woman	1660	1728	Swiss	Multiinstrumentalist and singer	Baroque
Turlough O'Carolan	Blind	Man	1670	1738	Irish	Harpist and composer	Baroque
Johann Mattheson	Deaf	Man	1681	1764	German	composer	Baroque
Boyce William	Deaf	Man	1711	1779	English	Organist and composer	Baroque
Ignaz Holzbauer	Deaf	Man	1711	1783	Austrian	Singer and composer	Baroque
John Stanley	Blind	Man	1712	1786	English	Organist and composer	Baroque
Joseph Anton Steffan	Blind	Man	1726	1797	Bohemian	composer	Classical
Hugh Higgins of Tyrawley	Blind	Man	1737	1791	Irish	Harpist	Classical
Alexandro Marie Antoin Fridzeri	Blind	Man	1741	1825	Italian	Mandolinist, violinist, organist and a composer	Classical

Maria Theresia von Paradis	Blind	Woman	1759	1824	Austrian	Pianist and composer	Classical
Aleksey Zhilin	Blind	Man	1766	1848	Russian	multiinstrumentalist and composer	Classical
Ludwig van Beethoven	Deaf	Man	1770	1827	German	Pianist and composer	Classical
Oliver Shaw	Blind	Man	1779	1848	American	Organist and composer	Romantic
John Purkis	Blind	Man	1781	1849	English	Organist	Romantic
Charlotta Antonia Seuerling	Blind	Woman	1782	1828	Swedish	Harpichordist, singer and composer	Romantic
George Warne	Blind	Man	1792	1868	English	Organist and composer	Romantic
Josef Proksch	Blind	Man	1794	1864	Bohemian	Pianist and composer	Romantic
Nicolas Bosret	Blind	Man	1799	1876	Belgian	Organist and composer	Romantic
John Crooks "Squire" Hughes	Mobility impaired	Man	1800	1872	American	Singer	Romantic
Charles Auguste de Bériot	Blind	Man	1802	1870	Belgian	Violinist and composer	Romantic
Louis Braille	Blind	Man	1809	1852	French	Cellist and organist	Romantic
Robert Schumann	One-handed	Man	1810	1856	German	Composer, pianist and music critic	Romantic
Henry Smart	Blind	Man	1813	1879	English	Organist and composer	Romantic
George Alexander Macfarren	Blind	Man	1813	1887	English	Composer and musicologist	Romantic
Giovanni Vailati	Blind	Man	1815	1890	Italian	Mandolinist	Romantic
Robert Franz	Deaf	Man	1815	1892	German	Organist and composer	Romantic
Bedřich Smetana	Deaf	Man	1824	1884	Bohemian	composer	Romantic
Martin O'Reilly	Blind	Man	1829	1904	Irish	Harpist	Modern
Bertha Tammelin	Blind	Woman	1836	1915	Swedish	Singer and pianist	Modern
David Duffie Wood	Blind	Man	1838	1910	American	composer	Modern
Josef Labor	Blind	Man	1842	1924	Austrian	composer	Modern
Gabriel Fauré	Deaf	Man	1845	1924	French	composer	Modern

Agathe Backer Grøndahl	Deaf	Woman	1847	1907 Norwegian	Pianist and composer	Modern
Thomas 'Blind Tom' Wiggins	Blind	Man	1849	1908 American	Pianist and composer	Modern
Géza Zichy	One-handed	Man	1849	1924 Hungarian	Pianist	Modern
John W. Bischoff	Blind	Man	1850	1909 American	Organist and composer	Modern
Francisco Tárrega	Blind	Man	1852	1909 Spanish	Guitarist and composer	Modern
Nikoghayos Tigranian	Blind	Man	1856	1951 Armenian	Pianist, composer and ethnomusicologist	Contemporary
Ethel Smyth	Deaf	Woman	1858	1944 English	conductor	Contemporary
Frederick Delius	Mobility impaired	Man	1862	1934 English	Violinist, pianist and composer	Contemporary
Alfred Hollins	Blind	Man	1865	1942 English	Organist and composer	Contemporary
Almeda C. Adams	Blind	Woman	1865	1949 American	Pianist and singer	Contemporary
William Wolstenholme	Blind	Man	1865	1931 English	Organist and composer	Contemporary
Alfredo Javaloyes						
López	One-handed	Man	1865	1944 Spanish	Violinist and composer	Contemporary
Louis Vierne	Blind	Man	1870	1937 French	Organist and composer	Contemporary
Carl Cohn Haste	Blind	Man	1874	1939 Danish	composer	Contemporary
Ivan Kuchuhura-						
Kucherenko	Blind	Man	1878	1937 Ukrainian	Kobzar	Contemporary
Augustin Barié	Blind	Man	1883	1915 French	Organist and composer	Contemporary
Otto Klemperer	Mobility impaired	Man	1885	1973 German-Israelian	Pianist and composer	Contemporary
Paul Wittgenstein	One-handed	Man	1887	1961 Austrian-American	Pianist	Contemporary
Paul Alix	Blind	Man	1888	1974 French	Organist and composer	Contemporary
Eleanor Spencer	Deaf	Woman	1890	1973 American	Pianist	Contemporary
Abing	Blind	Man	1893	1950 Chinese	Erhu and pipa player	Contemporary

Douglas Fox	One-handed	Man	1893	1978	English	Pianist, organist and conductor	Contemporary
André Marchal	Blind	Man	1894	1980	French	Organist	Contemporary
Michio Miyagi	Blind	Man	1894	1956	Japanese	Koto player	Contemporary
Otakar Hollmann	One-handed	Man	1894	1967	Bohemian	Pianist	Contemporary
Harriet Cohen	One-handed	Woman	1895	1967	English	Pianist	Contemporary
Petko Staynov	Blind	Man	1896	1977	Bulgarian	Pianist and composer	Contemporary
Rudolf Braun	Blind	Man	1896	1925	Austrian	Pianist and composer	Contemporary
Blind Willie McTell	Blind	Man	1898	1959	American	Guitarist and singer	Contemporary

Table 3 – Interviewees by Phase - Detailed information

Name	Citizenship	Country of residence	Occupation	Interview phase	Phase focus	Interview date	Place of interview
Michael (Last name withheld by request)	Canada	Canada & United States	Pianist	Phase 1	Physical and sensorial impairments	October 20, 2020	Zoom
George Dennehy	United States	United States	Singer and guitarist	Phase 1	Physical and sensorial impairments	October 22, 2020	Zoom
Lachi	United States	United States	Singer	Phase 1	Physical and sensorial impairments	October 23, 2020	Zoom
Marko Vuoriheimo	Finland	Finland	Hip-hopper	Phase 1	Physical and sensorial impairments	October 28, 2020	Zoom
Evelyn Glennie	United Kingdom	United Kingdom	Percussionist	Phase 1	Physical and sensorial impairments	October 29, 2020	Zoom
Blaine Harrisson	United Kingdom	United Kingdom	Singer and guitarist	Phase 2	Education, disability perception	October 30, 2020	Skype
Kevin McMillan	Canada	United States	Singer	Phase 2	Education, disability perception	November 6, 2020	Zoom
Paul Whittaker	United Kingdom	United Kingdom	Pianist	Phase 2	Education, disability perception	November 17, 2020	Zoom
Kris Halpin	United Kingdom	United Kingdom	MiMu gloves player	Phase 3	New technologies	March 15, 2021	Zoom
Clarence Adoo	United Kingdom	United Kingdom	Headspace player	Phase 3	New technologies	March 17, 2021	Zoom

Molly Joyce	United States	United States	Composer	Phase 4	Adaptations, disability activism, tours & venues	January 27, 2021	Zoom
Gaelynn Lea	United States	United States	singer and violinist	Phase 4	Adaptations, disability activism, tours & venues	February 1, 2021	Zoom
Adrian Anantawan	Canada	United States	Violinist	Phase 4	Adaptations, disability activism, tours & venues	February 8, 2021	Zoom
John Kelly	United Kingdom	United Kingdom	Singer and guitarist	Phase 4	Adaptations, disability activism, tours & venues	April 7, 2021	Zoom
Amal Fikry	Egypt	Egypt	Board member of the Al Nour Wal Amal Chamber Orchestra	Phase 4	Adaptations, disability activism, tours & venues	June 17, 2021	Zoom
Ryan Gooch Nelson	United States	United States	Singer and guitarist	Phase 4	Adaptations, disability activism, tours & venues	October 9, 2021	Zoom
Felix Klier	Germany	Germany	Hornist	Phase 4	Adaptations, disability activism, tours & venues	March 3, 2022	Zoom
Frédéric Zeitoun	France	France	Singer and guitarist	Phase 4	Adaptations, disability activism, tours & venues	August 5, 2023	In person