

Universal Design for Music: Exploring the Intersection of Deaf
Education and Music Education

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INTRODUCTION

Music is not bound to a single modality, language, or culture, but few music education programs represent a multimodal spectrum of music: confined by conscious or implicit audiocentric biases—their approaches to music overlook or exclude the contributions of Deaf culture. Even within deaf education, music is commonly conceptualized as an auditory practice, whether as an instrument of speech therapy (Jones, 2015) or as a domain that deaf students might not attend (Darrow, 1993). Traditionally, music education has deemphasized multimodality and operates on definitions of music that reinforce an audiocentric perspective (Good, Reed, & Russo, 2014). This ideology excludes d/Deaf and hard of hearing students and “obscures and invalidates d/Deaf musical experiences” (Holmes, 2017, 179) – while at the same time masking the cultural subjectivity of this conception of music. Yet the intersection of music education and deaf education possesses incredible potential: Deaf musical traditions – including engaging with the sounds of music in non-auditory modes and creating original music using American Sign Language (ASL) and rhythmic movements – can challenge conventions of music and music education that implicitly place hearing people and hearing musical traditions at the center of musical expression and enjoyment.

One promising pathway to making accessible and inclusive music education a reality is Universal Design for Learning (UDL), an approach to education that provides guidelines for including, empowering, and motivating all students (Meyer, Rose, & Gordon, 2014). Deaf ways of engaging with music can destabilize the hearing definition of music and unmask its subjectivity – and when music education systems adopt a more universal definition of music, teachers can engage d/Deaf and hard of hearing students with the music curriculum in ways that are rewarding, stimulating, and affirming. Through practice-led narrative research, a group of educators (a Deaf teacher, a hearing graduate student, a hearing music teacher, and a hearing ASL interpreter) reflected on the ways UDL shapes our work in developing music education that is affirmative to the strengths of d/Deaf and hard of hearing students and supports a balanced conception of music aside from an audist bias, demonstrating multiple pathways to making universal design for music a reality.

THEORETICAL BACKGROUND

Through three overarching principles (see, e.g. Meyer, Rose, & Gordon, 2014), UDL aims to remove curricular barriers for all students from the outset, emphasizing the imperative to expect variability (Meyer, Rose, & Gordon, 2014). First, teachers must utilize *multiple means of representation* – multiple ways of presenting material so that students can construct their own understandings. Teachers must also allow for *multiple means of expression* – multiple options for

students to share their understandings. Finally, teachers must provide *multiple means of engagement* – multiple opportunities for students to develop motivation, sustain effort, and become lifelong learners. In practice, these principles support curricula that remove barriers for all students, regardless of individual strengths and learning styles (Meyer, Rose, & Gordon, 2014). The principles overlap, laying the groundwork for classroom environments that make all students feel welcome, capable, engaged, and treated fairly (Burgstahler & Cory, 2008). UDL goes beyond implementing accommodations – retroactive approaches to removing barriers for all students – thus taking the stance that a diversity of perspectives and approaches is both expected and valuable. And as practitioners of UDL note, when a curriculum is accessible to all, all people benefit (Meyer, Rose, & Gordon, 2014).

Although its rhetoric supports the inclusion for all students, UDL theory has yet to focus on removing barriers that stem from false presumptions of cultural uniformity in schools (Chita-Tegmark et al., 2011). Neurologically, our cultures impact how we perceive and interact with the world (Chita-Tegmark et al., 2011); in turn, curricula that ignore cultural diversity create the very barriers that UDL combats. When education is truly accessible, “*all* systematically constructed barriers to education are challenged and addressed” (Hackman, 2008, 36). For this reason, many scholars (e.g. Hackman, 2008; Chita-Tegmark et al., 2011; Waitoller & King Thorius, 2016) call for UDL to more actively align itself with the principles of social justice education and/or culturally sustaining pedagogy, which, as defined by Paris (2012), “seeks to perpetuate and foster – to sustain – linguistic, literate, and cultural pluralism as part of the democratic project of schooling” (95). A theory of UDL that incorporates these stances would consider culture as one kind of expected variability and prompt educators to ensure that their curricula are accessible to and affirming of students of all cultural identities (Hackman, 2008; Nasir, Rosebery, Warren, & Lee, 2005). Further, because all students benefit from exposure to cultural practices and values other than their own (Chita-Tegmark et al., 2011), a culturally sustaining UDL benefits all learners.

Similarly, music education systems create their own specific barriers through presumed uniformity, tending to reproduce traditional pedagogy from music teachers’ own instructional experiences and even historical legacies of music instruction (Quaglia, 2015). Music educators often interpret national music standards “rather narrowly in terms of familiar methods and content” (Quaglia, 2015, 4). These narrowly interpreted pedagogies implicitly target an idealized (and hearing) student-audience, despite that this presumption is culturally constructed (Straus, 2011). To truly include Deaf students, music education must adopt the perspective of culturally sustaining pedagogy that it is necessary to disrupt approaches “that have historically pathologized students’ abilities” (Waitoller & King Thorius, 2016, 367) and recognize the assets that Deaf students can bring to the music classroom. To design accessible and inclusive music education in accordance with a theory of UDL that is culturally sustaining, teachers must move beyond constructing accommodations to existing music curricula and welcome Deaf-led ways of creating, experiencing, and defining music (e.g. Straus, 2011; Jones, 2015). A theory of UDL that is actively and intentionally culturally sustaining equips teachers to open traditional music education to Deaf gain.

Using classroom experiences as our primary research sites, we have developed approaches that blend these theoretical approaches into everyday practice. We consider learner variability in

terms of sensory (deaf/hearing), linguistic (ASL/English), and cultural (Deaf/hearing) diversity in order to theorize universally designed music education.

TECHNOLOGY

Describing her artistic process and guiding questions, Deaf sound artist Christine Sun Kim asks, “Why is sound itself so hearing-centric? Why can’t it be our thing? I feel like the Deaf community knows more about sound than we think” (Dpanvideos, 2015). Though Kim is not specifically referring to music education, her questions represent a perspective that is glaringly absent from that domain. In order for the curriculum to include d/Deaf and hard of hearing students, traditional music education must break free from hearing-centric experiences of sound. In a mainstream setting, teachers can realize the principles of UDL by incorporating technology for exploring music multimodally into the music curriculum.

All sound starts as vibration, and multiple technologies take advantage of this property to represent music in a modality that students can feel. A recent study at the University of Washington used fMRI data to indicate that feeling music stimulates the same brain areas in Deaf adults as hearing music does in those of hearing adults (described in Loeffler, 2014). This neurological evidence aligns with Deaf practices such as holding balloons or touching or sitting on speakers to feel musical vibrations (Loeffler, 2014). Technology can bring these practices into the music classroom and use them to represent technical elements of music. For example, removing the protective screen from a typical modern speaker and exposing the vibrating machinery inside allows physical contact such that students can physically feel the sound. This speaker makes music accessible to deaf students and makes this modality of music accessible to hearing students, whose perception is limited by the “distraction” of sound (Jones, 2015, 58). Additionally, an increasing variety of wearable technology, such as vibrating vests, backpacks, and seated systems made by Subpac, represents sound through touch.

UDL principles also support technology that transforms music into colors and shapes that visually correspond to sound’s basic elements: intensity (volume) and frequency (pitch). This kind of representation is widely accessible through smartphone and tablet applications, including *Absorbed*, *Audiogasm*, *Decibel 10*, *GarageBand*, *Gravitarium*, and *insTuner* – all of which are available for free or a low cost for iOS. Using these kinds of devices marks a break from the traditional tools of music education, but NAFME’s Opportunity-to-Learn Standards (2015), which aim to support music education programs’ implementation of the core music standards, repeatedly note that tablets should be provided “for use *as musical instruments*” (12, 15, 21, emphasis added); visual music apps actualize this standard in a way that supports a multimodal definition of music. In cases where tactile sensations do not provide clear enough representation on their own (for example, certain speakers are better for conveying higher or lower frequency sounds), visual representations can “contextualize and augment tactile sensations” (Holmes, 2017, 210) to provide a more complete musical representation. In a general music class, these technologies can make the formal elements of music under study (such as rhythm, key, musical form, etc.) accessible in non-auditory modes so that all students have access to the curriculum.

Many of the apps that represent music multimodally also provide tools to *create* music multimodally. With these options available, d/Deaf and hard of hearing students can engage with the concepts and skills included in the NAFME (2014) standards for creating music – from

developing their initial ideas to planning and drafting the musical form that best represents their ideas to revising and sharing their work. Music is a powerful tool for storytelling, expressing emotion, and being creative, and it is important within music education to give all students the opportunity to express themselves musically in any mode(s) they choose. These tools can remove barriers between the music curriculum and d/Deaf and hard of hearing students and open access to what Kim calls the “social currency” (TED, 2015) of sound in a way that is culturally sustaining.

Music teachers who implement these kinds of technology should work to incorporate it into their own conceptual understanding of music as well as their curricula, recognizing its equivalence to auditory music technology. In a mainstream setting, multimodal music technology can productively challenge hearing students’ conceptions of sound; Kim reports that after taking one of her workshops, hearing participants’ “perspective of sound becomes less fixed” (Dpanvideos, 2015). Though all of the students in a mainstream music class can use this technology, a d/Deaf or hard of hearing student may bring a different perspective to visual and tactile representations of music than a hearing student (Straus, 2011). In turn, a d/Deaf or hard of hearing student can assert a unique authority on music – the sharing of which enriches the music class community. Looking to the future, Loeffler (2014) writes, “there may be more opportunities to create more musical innovations [...] after the Deaf community has understood its role in contributing to the universal music culture” (451). An accessible, universally designed music education today can foster the growth of tomorrow’s Deaf musicians, leading the way for innovations in multimodal music for generations to come.

INTERPRETING

The concept of “dynamic equivalence” – that a successful translation evokes the same response across linguistic audiences (Nida & Taber, 1969) – is central to an interpreter’s practice (Humphrey & Alcorn, 2007). ASL interpreters have a responsibility to convey both verbal communication and other auditory aspects of everyday environments with as precise dynamic equivalence as possible. Too often when interpreting music, interpreters simply sign MUSIC without technical or affective detail – an approach that is far from dynamically equivalent. Interpreting music into ASL with full dynamic equivalence is crucial for learning, involvement, and participation when a music education setting involves auditory music.

Several factors could inform the method of interpreting music. Interpreters can use handshapes that represent the musical source – the instruments/vocals, musical ensemble, and range of sound – in order to distinguish which instruments are prominent at different intervals throughout the performance. The formations of signs can also reflect the size of the ensemble. In a solo performance, the body and hands work in unison to represent the sounds of one instrument or vocalist, whereas with large ensembles, the interpreter’s hands and body can represent multiple instruments, rhythms, and patterns simultaneously. Rhythm is an especially important element to convey in music interpretation (Sutherland, 1985); as Deaf musician Rosa Lee Timm notes, rhythmic signing provides a way for Deaf audiences to visually connect with the music (NIEC Outcomes Circle, 2013). All of these factors together provide a clear visual representation of the musical elements and patterns that hearing audience members will primarily perceive auditorily. In the classroom, these factors contribute to Deaf (and hearing) students’ learning of instrumental variety, rhyme, and rhythmic patterns, supporting their full engagement within this content area.

Dynamic equivalence also includes “the expressive factor,” or the feeling (beyond just conceptual understanding) that discourse engenders in its audience (Nida & Taber, 1969). In music, this “expressive factor” is even more heightened than in conversational discourse through the emotion conveyed in a song’s lyrics and/or musical line (Sutherland, 1985). Whether or not a musical piece has lyrics, an interpreter’s facial expressions and body language can convey all of the meaning, along with shifts in emotion, throughout a musical piece, as well as displaying changes in tone, intonation, tempo, and composition. These variations are critical for representing the difference in the feelings certain sounds provoke. When a song does have lyrics, Timm explains, it is most important to convey the song’s story, an approach that reflects Deaf discourse practices (NIEC Outcomes Circle, 2013). Further, when working with lyrics, interpreters must find a middle ground between following the English word-for-word and completely disregarding the English text to just explain the song in ASL (NIEC Outcomes Circle, 2013). The translated lyrics should also be signed in a style that matches the song’s emotional register and rhythm.

Through music-to-ASL interpreting, interpreters can also facilitate opportunities for Deaf audience members to be fully engaged and immersed in the musical experience, connecting not only with the music but also with the hearing audience. As audience members, students interact with one another during performances or music class to share their individual responses with their peers; if a Deaf audience member has access to interpreted music, they receive the same information and cues as the hearing audience, and thus can participate in the social dynamics of the music event. Deaf musician Sean Forbes has remarked that while our society often constructs Deaf and hearing students in opposition to each other, music that is accessible through ASL, such as his own work, can subvert that construction and bring the two student communities together (qtd. in Jones, 2015).

Interpreting music with full dynamic equivalence supports a musical experience that is bicultural. Further, mainstream schools may not be aware that a Deaf/hearing bicultural vision of music does not need to be bridged by hearing ASL interpreters alone. For example, ensembles could collaborate with Deaf interpreters and/or musicians – either instead of or in tandem with hearing interpreters – during rehearsals and performances, and music teachers could show ASL music videos created by Deaf musicians as a component of a linguistically and culturally diverse music curriculum.

ASL POETRY

In both of the previous sections, a Deaf cultural perspective on music decentered – but still ultimately responded to – auditory-focused conceptions of music. UDL also provides a framework for fully centering Deaf culture within music education: developing a music curriculum that intrinsically and essentially includes ASL. The boundaries of “sign language music” are not uncontested, representing different literary forms to different artists and scholars; our focus is on original works created in a sign language, primarily without an auditory component, that utilize the formal elements of music as they manifest in visual-gestural modes of expression – namely, ASL poetry, which is musical in many ways.¹ Deaf poet Clayton Valli

¹ Cripps, Rosenblum, Small, & Supalla (2017) draw a distinction between sign language poetry and sign language music in terms of each form’s use of rhythmic and movement patterns. However, they note that more research is

(1993) describes how poets can use the phonological properties of ASL to create rhyme through repetitions of handshape, location, movement, and non-manual signals. Poets may use signs with identical or near-identical phonological features; it is the repetition of these features that creates the rhyme, just as repetition of sounds creates auditory rhyme (Valli, 1993). Poets' sign choices also create rhythms, tempos, and meters (Valli, 1993). These elements are also the building blocks of music in hearing culture. That these elements occur visually underscores the need for schemas of music that encompass the full range of musical cultures. Analysis of these elements within ASL poetry aligns with NAfME (2014) General Music standards, such as Common Anchor #8, which guides students to understanding that "Through their use of elements and structures of music, creators and performers provide clues to their expressive intent" (12). Through the process of learning about signed rhymes, rhythms, tempos, and other musical features, students can deconstruct and formally analyze ASL poetry in order to interpret these elements in terms of the poets' themes and intentions.

Representing music through ASL poetry brings Deaf culture directly into the music classroom, aligning with the many NAfME standards that urge educators to consider cultural diversity – specifically, in terms of how a creator's cultural context informs their work (e.g. Common Anchor #10 in NAfME, 2014). While this standard is likely often interpreted as a guideline for including music from varying ethnic, geographic, and religious cultures, this multiculturalism implicitly assumes that each of these kinds of cultures produces auditory music; studying ASL poetry demands a broader and more accurate understanding of multiculturalism. Students can also learn about cultural context by exploring the tradition of percussion signing (see Bahan, 2006; Loeffler, 2014). From sports events (from George Kannapell in the 1930s to the Bison Song today) to religious ceremonies and even protests, the strong contexts that inform these unifying songs serve as a way to analyze the role of history and culture in music-making, an element mentioned in numerous standards (NAfME, 2014), and the percussive vibrations link students' work with the rhythms of ASL poetry to their work with any tactile music technology in use in the classroom. For hearing students who are studying ASL, ASL poetry presents an opportunity to learn about Deaf culture (Cripps et al., in press, 6). More importantly, for Deaf students, ASL poetry "legitimizes these students' language and culture in a natural and automatic fashion" (Wolter, 2006, 160), just as current multicultural music curricula can affirm students' multiple identities, languages, and cultures through the power of representation.

Teachers can also create opportunities for expression through ASL poetry. The NAfME (2014) general music standards include benchmarks for students' developing the ability to "generate musical ideas for various purposes and contexts" (1). With ASL poetry as an option for expression, Deaf students can have an outlet for expressing their ideas in a culturally sustaining musical form. There are many ways to spark creativity in music classes with students who sign. In one activity, students create short poems that follow given structures of lines and meters, choosing only one or two signs in order to explore the effects of repetition and rhythm. Whether beginners or fluent signers, students play with language (as in Valli, 1993) and experiment with stress and tempo – skills that transfer to musical expression in other modes. Moreover, students can express themselves creatively and, through that expression, develop new understandings about ASL and ASL poetry. This activity also centers Deaf culture within the music classroom.

needed on both forms of literature. In this manuscript, we consider sign language poetry to encompass both of these forms. (See Cripps et al. [2017] for additional details.)

Further, Common Anchor #3 prompts curricula to explore the concept that “Musicians evaluate, and refine their work through openness to new ideas, persistence, and the application of appropriate criteria” (NAfME, 2014, 3). Students can explore this process as they develop their own ASL poetry. Deaf poet Peter Cook describes how he uses video to evaluate his works-in-progress, experimenting with signs, refining his expression, and considering the audience viewpoint (qtd. in Wolter, 2006); students can undertake a similarly structured revision process when creating ASL poetry over the course of a unit, developing broad revision skills and stamina that they can apply across all musically expressive contexts.

Finally, exploring ASL poetry in the context of music can engage students in music-making in ways that affirm Deaf cultural values. Poetry can be a method through which Deaf children can “develop an explicit understanding and appreciation” of sign language (Sutton-Spence, 2014, 119), in terms of both analyzing the rules that govern ASL (and how and why poetry might break those rules) and taking ownership of ASL. Valli (1993) further explains that “as language is a key component in identity, and as a strong sense of identity is crucial to empowerment, ASL language arts are very important in the education of deaf children” (143). For Deaf students, ASL poetry in the curriculum can support self-efficacy and identity development (Cripps et al., in press), empowerment as members of the Deaf community (Wolter, 2006), and confidence and pride (Cook, 2006). These benefits play out in practice as well as in theory. Cook (2006) describes seeing these benefits firsthand when he has led school workshops that give students the opportunity to play with language, which he cites as central to these identity-building processes. And in a case study of a poetry unit at a Deaf school, Arenson & Kretschmer (2010) found that the students personally connected more strongly to the ASL poems they studied than those written in English, reflecting the students’ increased affective connection to the curriculum when their culture and language is embedded in it. Engaging with ASL poetry can also give students a literary way to affectively explore and connect with themes of resisting audism, affirming Deaf culture, and/or liberation in ways that parallel De’VIA as well as broader postcolonial literary traditions (Christie & Wilkins, 2007). Themes like these are necessary to explore in a curriculum that is critically multicultural (Hackman, 2008) – as a theory of UDL that truly includes all must aim to be.

CONCLUSION

As Holmes (2017, 212) notes, approaching music from d/Deaf perspectives “demonstrates that listening encompasses a full spectrum of sensory experiences, musical contexts, individual preferences, cultural practices, and social experiences – what amounts to an ever-evolving set of listening states.” Holmes’s description encapsulates the variability that defines the UDL philosophy. There is no singular Deaf (or deaf) way of engaging with music, so many ways must become a fundamental part of any music curriculum that values sensory, linguistic, and cultural diversity. Visual and tactile music technology, music-to-ASL interpreting, and the study of ASL poetry each engage Deaf (and hearing) learners in different ways, providing multiple means of representation, expression, and engagement in order to ensure that all students are sensorily, linguistically, and culturally included. Understanding music as multimodal, multilingual, and multicultural in ways that reflect Deaf culture is both necessary and, as these approaches demonstrate, possible in classroom practice. Further, the variety within these techniques collectively demonstrates the many limitations inherent in sound-centric and hearing-led constructions of music. With UDL, these techniques are not accommodations but are embedded

in the music curriculum – and when taken to a broader level, they have the potential to change the foundation of music education itself. We hope that practitioner-researchers continue to explore technology, interpretation, and ASL poetry as part of a commitment to inclusive and accessible music education.

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