Music's Role in the American Oralist Movement,

1900-1960

by

Abby Lynn Lloyd

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Graduate Supervisory Committee:

Kay Norton, Chair
Joshua Gardner
Christopher Wells

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ABSTRACT

Historically, music and the experiences of deaf or hard-of-hearing (DHH) individuals have been intertwined in one manner or another. However, music has never ignited as much hope for the "improvement" of the Deaf experience as during the American oralist movement (ca. 1880-1960) which prioritized lip-reading and speaking over the use of sign language. While it is acknowledged that the oralist movement failed to provide the best possible education to many American DHH students and devastated many within the Deaf community, music scholars have continued to cite publications by oralist educators as rationales for the continued development of music programs for DHH students.

This document is an attempt to reframe the role of music during the American oralist movement with a historical account of ways music was recruited as a tool for teaching vocal articulation at schools for the deaf from 1900 to 1960. During this time period, music was recruited simply as a utility to overcome disability and as an aid for assimilating into the hearing world rather than as the rich experiential phenomenon it could have been for the DHH community. My goal is to add this important caveat to the received history of early institutional music education for DHH students. Primary sources include articles published between 1900 and 1956 in *The Volta Review*, a journal founded by the oralist leader Alexander Graham Bell (1847-1922).

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TABLE OF CONTENTS

Page

LIST OF TABLES iv

INTRODUCTION 1

RELATED LITERATURE....................3

Historical Accounts: Deaf Music Education....................3

Deaf Cultural History....................7

HISTORICAL CONTEXT....................11

The Oralism vs. Manualism Debate....................11

Alexander Graham Bell, Oralism, and Eugenics....................14

The State of Audiology 17

MUSIC TRAINING AT SCHOOLS FOR THE DEAF....................19

Rhythm Training....................20

Rhythm/Toy Orchestras 27

Military/Brass Bands 29

Technological Advancements 31

Crossing the Divide: Music Education and Music Therapy 38

CONCLUSIONS: AN ISSUE OF VALUES 42

REFERENCES 47

APPENDIX

A TABLE OF PUBLISHED & UNPUBLISHED WORKS: RHYTHM EXERCISES & RHYTHM ORCHESTRAS (1900 - 1960) 51

LIST OF TABLES

Table Page

1. American Schools for the Deaf Founded Prior to 1850 12

2. Rhythm Articles, Feb. 1900 – Feb. 1918 22

3. Published & Unpublished Works: Rhythm Exercises & Rhythm Orchestras (1900 - 1960) 52

INTRODUCTION

Music educators and music therapists recognize the potential benefits of music programs for deaf and/or hard-of-hearing (DHH) students and adults. In the process of advocating for such programs, the rhythm programs instituted by oralist educators during the first half of the twentieth century are often recounted. However, the encompassing history of the oralism movement, which shaped the ways music was introduced into American schools for the deaf, is rarely discussed in published scholarship about music. An initiative with troubling ties to the proponents of eugenics, oralism was dedicated to the elimination of Deaf culture and the assimilation of DHH individuals into the hearing world. Oralists valued an educational system that taught speech, precise vocal articulation, and lip-reading above all else. In pursuit of these goals, music was introduced in schools for the deaf as a tool to teach speech and to help improve students' vocal articulation.[1]

In the beginning, oralist educators viewed music as a promising solution to the difficult challenge of teaching DHH students to speak, and they were quick to declare the boundless potential of music as an educational tool. While the responses of DHH students varied (some students achieved noticeable speech improvement while others saw none),

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[1] Publications in *The Volta Review* and research presented by Alan L. Solomon suggest that the rhythm programs developed by Alexander Graham Bell and other oralist educators at the end of the nineteenth century marked the initiation of music education for DHH students in a formal setting; Alan L. Solomon, "Music in Special Education before 1930: Hearing and Speech Development," *Journal of Research in Music Education*, Vol. 28, No. 4 (Winter, 1980): 239.

rhythm programs motivated by oralist ideals were instituted nationwide. From the beginning of the twentieth century, musical exercises for use in rhythm programs were methodically developed, implemented, and reported in *The Volta Review*, the primary journal for oralist educators. When the oralism movement began to fade and sign language began to take over as the primary form of communication for DHH individuals in the 1940s, music remained, but only in the periphery as compared to its prior status during the heyday of the oralist movement.

Music educators and music therapists had realized that music offered benefits beyond teaching speech, including improved self-esteem for students, improved physical coordination and presentation, and improved student behavior. However, dialogues characterizing music as a utility continued to persist among music educators. This document discusses the history of music at schools during a time when oralism dominated. It surveys some of the first formal music programs for DHH individuals, including rhythm studies, rhythm/toy orchestras, and military/brass bands—programs that valued the systematical utilization of music over the creative experiences offered by the art-form. Rather than discouraging interaction between music educators/therapists and the Deaf community, this document is intended to establish a better understanding of the historical roots of music education intended for the DHH community. In particular, I examine the ways music was recruited as a tool for teaching vocal articulation at schools for the deaf from 1900-1960.

RELATED LITERATURE

Historical Accounts: Deaf Music Education

Eleanor M. Edwards's 1974 book *Music Education for the Deaf* was a starting point for this research. In an effort to provide justification for music education for DHH students, Edwards (a trained musicologist and music educator) presented a chronological history of the use of music with DHH students.[2] In her first five chapters, Edwards summarized articles and other publications dated from the mid-nineteenth century through the 1960s. The review is exhaustive, the sources are accurately documented, and each of Edwards's findings were briefly summarized. With so much ground to cover, Edwards provided only brief summaries of each article/publication, and she specifically highlighted evidence that supported the development of a music education curriculum for DHH students.

However, focusing on a contemporary model for music education for DHH students, Edwards provided little historical context outside of the sphere of music education and did not discuss the historical influence of the oralism movement. Perhaps, in keeping with educational scholarship of the time, she did not comment on the toll these educational experiences took on many DHH learners. Nevertheless, she does provide the results of a thorough literature review that was revisited often during the writing of this document.

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[2] Eleanor M. Edwards, *Music Education for the Deaf* (South Waterford, ME: Merriam-Eddy, 1974).

Alan L. Solomon's 1980 article "Music in Special Education before 1930: Hearing and Speech Development" briefly discusses music in American schools for the deaf during the nineteenth century. This article contains isolated reports of DHH students interacting with music, including a paragraph about the curriculum used in 1883 at the Kindergarten and Primary School for Hearing and Deaf Children (an organization founded in Washington D.C. by Alexander Graham Bell). According to Solomon, Bell's curriculum was one of the first programs to formally incorporate music for use with DHH students.[3] Yet, Solomon did not situate this evidence within the wider historical context of the oralism movement, and he did not detail Bell's work as a prominent oralist leader.

In 1985, Alice-Ann Darrow and George N. Heller provided a more thorough account of music education for DHH students during the nineteenth century. Their article, "Early Advocates of Music Education for the Hearing Impaired: William Wilcott Turner and David Ely Bartlett," focuses on a single primary source—an article published in the 1848 volume of *The American Annals for the Deaf and Dumb*. Written by deaf educator William Wilcott Turner, that 1848 article discusses David Ely Bartlett's success teaching piano to a young deaf girl. Using this 1848 article as evidence, Darrow and Heller declare a longstanding use of music with DHH students and describe Turner and Bartlett as pioneers of the movement for music education for the deaf.[4] Despite Bartlett's evident success and the probability that other DHH students benefitted from similar educational

[3] Solomon, 239.

[4] Alice-Ann Darrow and George N. Heller, "Early Advocates of Music Education for the Hearing Impaired: William Walcott Turner and David Ely Bartlett," *Journal of Research in Music Education*, Vol. 33, No. 4 (Winter 1985): 269.

experiences, reporting of music as a curriculum staple in American schools for the deaf appears only when it was used for the improvement of speech. An avid researcher in this arena, Darrow has published other articles which address the benefits of music in the more recent curricula for DHH students, including her 1985 article, "Music for the Deaf."[5]

In 1997, Deborah A. Sheldon provided a detailed historical account of the brass band at the Illinois School for the Deaf (from 1923 until 1942) in the *Journal of Research in Music Education*. This report details the formation of the band, educational techniques used by its leadership, its repertoire and engagements, resulting benefits experienced by the members of the band, and external criticism of the band. According to Sheldon, the purpose of this detailed historical account was to help efforts by researchers and educators (such as Darrow) to improve available access to music education. Sheldon states, "assuming that any such information could affect change, a historical success story might also help shape present and future actions and attitudes regarding music education for students who are deaf or hard-of-hearing."[6] This well-meaning, but incomplete perspective, among others, motivated my concern over the portrayal of oralist-era successes in the advocacy for music education among DHH populations.

A 1990 dissertation by Adylia Rose Roman explores historical developments in dance for hearing impaired individuals in the U.S. Roman's literature review contains a

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[5] Darrow, "Music for the Deaf," *Music Educators Journal*, Vol. 71, No. 6 (February 1985): 33-35.

[6] Deborah A. Sheldon, "The Illinois School for the Deaf Band: A Historical Perspective," *Journal of Research in Music Education*, Vol. 45, No. 4 (Winter, 1997): 582.

section specifically relevant to this document. “Dance in Education for the Hearing Impaired” addresses the role of dance in rhythm training, which was a form of music training developed by oralist educators in order to promote better speech. Unlike many music scholars, Roman acknowledges the oralist connections and explores the numerous ways that educators added body movements/dance to rhythm exercises. Furthermore, Roman lists numerous articles (published from ca. 1920 to 1960) that detail these activities.[7]

More recently, Jessica A. Holmes published an article in the *Journal of the American Musicological Society* which argues that “deafness belongs in musicology as a diverse set of experiences within the full spectrum of listening.”[8] In support of this argument, Holmes discusses the career of deaf percussionist Evelyn Glennie and investigates accounts of DHH individuals who are active participants in music culture. While much of this document explores accounts from the second half of the twentieth century, Holmes’s argument exemplifies the benefits of historical accounts which detail music in the lives of DHH individuals and suggests the need for updated reviews of such accounts.

A more thorough review of literature relating to music education for the deaf (including historical and non-historical research) is available in Warren N. Churchill’s 2016 dissertation “Claiming Musical Spaces: Stories of Deaf and Hard-of-Hearing

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[7] Adylia Rose Roman, “Dance for the Hearing Impaired in the United States” (Ed.D diss., Temple University, 1990), 22-23.

[8] Jessica A. Holmes, “Expert Listening beyond the Limits of Hearing: Music and Deafness,” *Journal of the American Musicological Society,* Vol. 70, No. 1 (Spring, 2017): 220.

Musicians."[9] His review includes research involving music and recipients of cochlear implants, as well as other medical discourses that involve music and DHH individuals. The body of Churchill's research focuses on "fieldwork observations" of the music-making process of DHH participants.[10]

Overall, scholarly research detailing the beginnings of music education in the curriculum at schools for the deaf fails to interact with research concerning the oralist movement and Deaf culture (much of which has been provided by scholars situated within the Deaf community). Nevertheless, music scholars working within the field of disability studies have set the stage for this investigation by developing theoretical models for discussing disability in regards to music. Works by Neil Lerner and Joseph N. Strauss, including the compilation of essays in *Sounding Off: Theorizing Disability in Music*, provide philosophical models for better understanding the interaction between music and the oralism movement.[11]

Deaf Cultural History

Recently, disability scholars have made great strides in documenting the history of Deaf culture in the U.S. Susan Burch, a prominent researcher in this field, has published many works that investigate the experiences of DHH individuals in America. Her Ph.D. dissertation, "Biding the Time: American Deaf Cultural History, 1900 to World War II,"

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[9] Warren N Churchill, "Claiming Musical Spaces: Stories of Deaf and Hard-of-Hearing Musicians" (Ed.D. diss., Columbia University, 2016), 14-41.

[10] Ibid., i.

[11] Neil Lerner and Joseph N. Straus, eds., *Sounding Off: Theorizing Disability in Music* (New York: Rutledge, 2006).

paints a picture of "Deaf agency and broad cultural maintenance" that persisted in opposition to the oralism movement.[12] Burch filled gaps left by scholars who had focused mainly on Deaf education during this time period by discussing issues of race, class, gender, and sub-cultures within the Deaf community. Burch's dissertation was later revised and republished by NYU Press under the title *Signs of Resistance: American Deaf Cultural History, 1900 to World War II*.[13]

Brenda Jo Brueggemann and Susan Burch continued to investigate sub-cultures and marginalized members of the Deaf community as editors of the book *Women and Deafness: Double Visions.*[14] Chapters of particular relevance to this document include Jessica Lee's "Family Matters: Female Dynamics within Deaf Schools" (pages 5-20), Margret Winzer's "The Ladies Take Charge: Women Teachers in the Education of Deaf Students" (pages 110-129), Emily K. Abel's "'Like Ordinary Hearing Children': Mothers Raising Offspring according to Oralist Dictates" (pages 130-146), and Burch's "'Beautiful, Though Deaf': The Deaf American Beauty Pageant" (242-262). As evidenced by articles printed in *The Volta Review*, music programs in oralist schools were predominately developed and implemented by female educators. Though men were often the designers of the oralism movement, women were its hands. The research compiled by Brueggemann and Burch contextualizes the lives of DHH women and female educators.

[12] Susan Burch, "Biding the Time: American Deaf Cultural History, 1900 to World War II" (Ph.D. diss., Georgetown University, 1999), iii-iv.

[13] Burch, *Signs of Resistance: American Deaf Cultural History, 1900 to World War II* (New York: New York University Press, 2002).

[14] Brenda Jo Brueggemann and Susan Burch (eds.), *Women and Deafness: Double Visions* (Washington, DC: Gallaudet University Press, 2006).

R. A. R. Edwards provides a history of deaf education with the book *Words Made Flesh: Nineteenth-Century Deaf Education and the Growth of Deaf Culture*.[15] Edwards discusses the contrasting educational movements of manualism and oralism and their resulting effects on American Deaf culture. Edwards takes a chronological approach in laying the historical foundation for deaf education in the U.S., and clearly outlines the events and attitudes that allowed the oralism movement to thrive early in the twentieth century.

John Vickrey Van Cleve also painted a picture of the oralist movement's beginnings as editor of *The Deaf History Reader*.[16] Addressing Deaf culture and deaf education in America from as early as the seventeenth century, this book presents chapters that tackle broad concepts alongside chapters that provide focused historical evidence. One such contribution by Brian H. Greenwald focuses on the career of Alexander Graham Bell and his influence on the oralism movement. By explaining Bell's attitudes towards the Deaf community, Greenwald appropriately links oralism to the eugenics movement.[17]

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[15] R. A. R. Edwards, *Words Made Flesh: Nineteenth-Century Deaf Education and the Growth of Deaf Culture* (New York: New York University Press, 2012).

[16] John Vickrey Van Cleve (ed.), *The Deaf History Reader* (Washington, DC: Gallaudet University Press, 2007).

[17] Brian H. Greenwald, "Taking Stock: Alexander Graham Bell and Eugenics, 1883-1922," in *The Deaf History Reader*, ed. John Vickrey Van Cleve (Washington, DC: Gallaudet University Press, 2007), 136-152.

A more detailed, chronological account of the history of deaf education is available in Edward L. Scouten's *Turning Points in the Education of Deaf People.*[18] Tracing deaf education back to antiquity, this work provides research investigating the international forces that influenced deaf education and oralism within the U.S. When applied to the topic at hand, the well-developed narratives listed above serve to inform and situate historical accounts of music within the Deaf community.

[18] Edward L. Scouten, *Turning Points in the Education of Deaf People* (Danville, IL: Interstate Printers & Publishers, 1984).

HISTORICAL CONTEXT

The Oralism vs. Manualism Debate

During the nineteenth and twentieth centuries, deep divisions existed between educators, parents, and Deaf individuals concerning the best method of communication for DHH students. Manual communication, or manualism, saw widespread use in America during the nineteenth century. By the middle of that century, many institutions dedicated to deaf education had been founded in the U.S. (see Table 1, page 12). Importantly, DHH students were often taught in institutions which also provided instruction for the blind. Most of these early schools focused on teaching DHH students with a combination of the following methods: 1) natural signs used routinely by students, 2) methodical signs taught to students by educators, 3) the manual alphabet, and 4) written English.[19]

Furthermore, many early schools for the deaf began to emphasize American Sign Language (ASL; a combination of French signs and signs of American origin), and it quickly spread from the American School for the Deaf (West Hartford, CT) to other deaf schools across the country.[20] According to R. A. R. Edwards, "very early on, a picture of the meaning of deaf education comes into focus. Deaf education was meant to bring deaf children into contact with the wider intellectual world that hearing people occupied by

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[19] Edwards, 38-39.

[20] Jack R. Gannon, *Deaf Heritage: A Narrative History of Deaf America* (Silver Spring, MD: National Association of the Deaf, 1981), 359.

teaching them to read and write English."[21] Supporters of manualism believed that sign language best supported teaching DHH students to read and write. In accordance with this belief, supporters of manualism spent little time teaching their students vocal articulation or lip-reading. With the establishment of many American schools for the deaf and an increased understanding of the nature of sign language, Deaf culture flourished during the first half of the nineteenth century.

Table 1. American Schools for the Deaf Founded Prior to 1850.[22]

Institution	Year Founded
American School for the Deaf (West Hartford)	1817
New York School for the Deaf (White Plains)	1818
The Pennsylvania School for the Deaf (Philadelphia)	1820
Kentucky School for the Deaf (Danville)	1823
Ohio School for the Deaf (Columbus)	1829
Virginia School for the Deaf and the Blind (Staunton)	1839
Indiana School for the Deaf (Indianapolis)	1843
Tennessee School for the Deaf (Knoxville)	1845
North Carolina School for the Deaf (Morganton)	1845
Illinois School for the Deaf (Jacksonville)	1846
Georgia School for the Deaf (Cave Spring)	1846
South Carolina School for the Deaf and Blind	1849

During the 1880s, an alternative form of communication—oralism—gained a stronghold in American schools for the deaf, and as oralist ideologies became

[21] Edwards, 39.

[22] Gannon, 21-26.

increasingly popular, the vitality of America's Deaf culture was threatened. Originally championed by the educational reformer Horace Mann (1796-1859) and advocate for the education of the blind, Samuel Gridley Howe (1801-1876), the American oralism movement was harshly critical of the use of sign language.[23] Oralists believed that sign language created a barrier between Deaf and hearing communities and limited the opportunities available to DHH students and adults.

As the oralist method began to sweep across the country, schools for the deaf began to ban the use of sign language. Students were often punished and degraded when they used signs within the classroom. Educators went as far as binding students' hands together or covering them with paper bags.[24] Oralist schools dedicated significant time and energy to teaching vocal articulation and lip-reading at the expense of other subjects, and these schools were often criticized for neglecting the overall intellectual development of their students. Many oralist schools refused to hire deaf instructors, fired deaf instructors on staff (to be replaced by hearing instructors), and ignored the counsel of DHH individuals.[25] Importantly, much of the pressure for DHH students to assimilate by learning lip-reading and speech came from external forces. Even though DHH students in

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[23] Many of the earliest schools established for the education of DHH students also served to educate blind and/or cognitively disabled students.

[24] Gannon, 361.

[25] Gannon, 363-364.

oralist schools were not allowed to use sign language in the classroom, the majority continued to rely on sign language outside of the classroom.[26]

While these actions led to deep divisions among educators of the deaf, oralism remained popular within American schools from the 1880s until the 1960s, when the "Deaf Renaissance" led to the re-integration of ASL into deaf education. The president of Gallaudet College from 1864-1910, Edward M. Gallaudet (1837-1917) led the opposition against oralism, and his belief in total communication was advocated long after his death.[27] According to Edward L. Scouten, during the reign of oralism, "Gallaudet [University] remained the most visible and prestigious stronghold of Deaf culture, where Deaf people, using American Sign Language (ASL), could live and study in an environment with complete communications access."[28] However, prominent figures such Alexander Graham Bell (1847-1922) successfully worked against the use of sign language and actively advocated against the development of the Deaf community.

Alexander Graham Bell, Oralism, and Eugenics

Although Alexander Graham Bell (1847-1922) was mainly known for the invention of the telephone, he dedicated substantial time and energy to the education of DHH students. Bell's interest in Deaf education largely stemmed from his family. He grew up with a deaf mother and later married a deaf woman; both his father and

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[26] "Oral Education and Women in the Classroom," PBS, accessed September 6, 2017, http://www.pbs.org/weta/throughdeafeyes/deaflife/women.html.

[27] Total communication (or complete communication) refers to the blended use of all available communication methods (such as sign language, speech, and lip-reading.)

[28] Fred Pelka, *What We Have Done: An Oral History of the Disability Rights Movement* (Amherst: University of Massachusetts Press, 2011), 397.

grandfather specialized in the teaching of speech and vocal articulation. Bell's experimentation with hearing devices eventually led to his being awarded the first U.S. patent for the telephone in 1876. Because he strongly advocated for this controversial method of Deaf education, Bell is often called the "father of American oralism."[29] Furthermore, largely due to Bell's promotion of oralism, eighty percent of American DHH students were taught without the use of sign language during the 1920s.[30]

In addition to being a staunch supporter of the oralist movement, Bell was an early supporter of eugenics.[31] In fact, Bell's belief in eugenics provided the underlying basis for his promotion of oralism; it is no coincidence that the peak of the oralist movement (late 1920s) correlated with the rise of the eugenics movement within the U.S. In "Upon the Formation of a Deaf Variety of the Human Race," published in 1884, Bell wrote:

> I desire to direct attention to the fact that in this country *deaf-mutes marry deaf-mutes*… If the laws of heredity that are known to hold in the case of animals also apply to man, the intermarriage of congenital deaf-mutes through a number of successive generations should result in the formation of a deaf variety of the human race.[32]

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[29] Scouten, 380.

[30] "Oral Education and Women in the Classroom," PBS, accessed September 6, 2017, http://www.pbs.org/weta/throughdeafeyes/deaflife/women.html.

[31] Eugenics refers to the science of selective breeding in an effort to improve the human race through the elimination of negative hereditary traits.

[32] Alexander Graham Bell, *Memoir Upon the Formation of a Deaf Variety of the Human Race* (Washington DC: National Academy of the Sciences, 1884), accessed September 6, 2017, https://archive.org/stream/cihm_08831#page/n7/mode/2up.

Bell was not the only one who feared the "formation of a deaf variety of the human race," and his philosophy spread quickly throughout the country. A 1922 article published in St. Petersburgh, Florida's *The Independent* warned:

> America is threatened with hearing loss.... Today there are 20,000,000 persons "hard of hearing." Unless there is something done to awaken the parents of the land to the responsibility of taking preventing steps with their children a race of deaf men and women may be the result.[33]

Bell believed the solution to this "genetic dilemma" was oralism and the elimination of sign language. He believed that students with refined vocal articulation and lip-reading skills would assimilate into the hearing community and be more likely to marry hearing partners. Thus, Bell inaccurately believed that the propagation of the oralist school would reduce the overall Deaf population in America.

Another educational method championed by Bell was "reverse mainstreaming." Not until the 1970s were Deaf students systematically and routinely "mainstreamed" into local public schools. However, at Bell's experimental school in Washington, D.C., hearing children were included in the teaching environment of the Deaf students, a method now called "reverse mainstreaming."[34] Bell believed the vocal articulation and lip-reading skills of DHH students would improve as they interacted with hearing students.

In addition to opening a purely oral school in Washington, D.C., Bell founded the Volta Bureau in 1887. The Bureau set out to "establish a center to house information on

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[33] "How Does this Prize Beauty Dance Without Being Able to Hear?" *The Independent* (St. Petersburg, FL), accessed April 8, 2015, https://news.google.com/newspapers?nid=950&dat=19221122&id=4rVaAAAAIBAJ&sjid=AlQDAAAAIBAJ&pg=1809,3092318&hl=en.

[34] Scouten, 366.

deafness," and in 1899 the Bureau began publishing the national journal *The Association Review* (renamed *The Volta Review* in 1909).[35] Although the Volta Bureau emphasized its impartiality in regards to the oralism vs. manualism debate, their publication *The Volta Review* was "devoted to speech-reading, speech, and hearing" and was published "monthly in the interests of better speech, better hearing, and speech-reading."[36] Led by these goals, music was often discussed in *The Volta Review* as an effective teaching tool for oralist educators.

The State of Audiology

During the first half of the twentieth century, hard-of-hearing students were trained alongside deaf students with little difference in curriculum. Acquired hearing loss was common due to communicable diseases such as scarlet fever, measles, mumps, and meningitis.[37] Furthermore, hearing aids were in their nascent phase, and audiology did not emerge as a distinct medical profession until the 1940s, when service members began to return from WWII with noise-induced hearing loss.[38] At this time, the diagnostic tools used to measure hearing loss were rudimentary. The first widely-used audiometer was developed in the 1920s, but measurements were less than precise. During the 1940s, acoustic methods were still routinely used for diagnosing hearing loss. For quantitative

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[35] Gannon, 77.

[36] *The Volta Review*, Vol. 22, No. 1 (January 1937): 1.

[37] Penicillin was not discovered until 1929, and vaccines for measles and mumps did not become widely available until the 1960s.

[38] D. Felisati, "Deafness in the 20th Century: Evolution of Clinical Otology, Prevention and Rehabilitation of Hearing Defects," *Acta Otorhinolaryngologica* Italica, Vol. 27, No. 1 (2007): 45.

evaluations, the diagnosis of hearing loss was often based on tests that evaluated a patient's ability to hear whispers, the spoken voice, or the ticking of a clock. For qualitative evaluations, a tuning fork was often used.[39]

Due to an overall lack of scientific advancement, oralist educators made little distinction between students who were congenitally deaf and students who had acquired severe hearing loss at a young age.[40] Regardless of their hearing status or medical history, speech and lip-reading skills were expected of all students enrolled in oralist schools. However, when musical training was offered as a method to improve speech, it was often experienced differently by students within the same the class.

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[39] Ibid.

[40] Such differences can have profound effects on the student's acquisition of speech during their education.

MUSIC TRAINING AT SCHOOLS FOR THE DEAF

A 1931 article in the *Rochester Advocate of English and Speech for the Deaf* (published and printed by the Rochester School for the Deaf) referenced Helen Keller's 1929 book, *Midstream: My Later Life*, in relating Keller's challenges with speech development and her hopes to improve her voice for public appearances. The author recounts Keller's success found while working with "Mr. White" (Charles A. White), a prominent vocal instructor at the Boston Conservatory of Music, then discusses the exercises Keller performed with White: "exercises for breath control and exercises without voice, then vowel, consonant and syllable drill, accent and rhythm, pitch and quality of tone [exercises]."[41] Targeted toward an audience of DHH students and their parents, the author concludes the article by encouraging DHH students and parents to be persistent in their ambitions for speech development, just as Helen Keller was persistent in her pursuits.

If this article offered inspiration to DHH students and parents at the Rochester School for the Deaf, it articulated the hopes of many parents associated with the Deaf community that musical training could help their child acquire audible speech and a chance at a "better" life. This hope is evident in an array of Deaf publications similar to the *Rochester Advocate*, articles that provided accounts of music helping DHH students with speech and vocal articulation and led to increased national interest in music training for DHH students.

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[41] "Selections from Helen Keller 'Mainstream,'" *Rochester Advocate of English and Speech for the Deaf*, Vol. 51, No. 9 (June 1931), 1.

Over time, music training for speech enhancement took on multiple forms at schools for the deaf. Speech-specific rhythm exercises with the piano and/or percussion instruments led to rhythm/toy orchestras at some schools. The use of music for speech development also led to the incorporation of technological advancements, which expanded the ways through which DHH students experienced music. This chapter will discuss the development of rhythm exercises, rhythm/toy orchestras, and military/brass bands at schools for the deaf, along with the incorporation of innovative technological advancements.

Rhythm Training

My review of articles published in *The Volta Review* and the *American Annals of the Deaf* reveals an early advocate for the addition of rhythm training in American schools for the deaf—Sarah A. Jordan Monro. In 1900, one of the first widely distributed articles discussing rhythm training for DHH students appeared in the oralist journal, *The Association Review* (later renamed *The Volta Review)*. The article consisted of a paper read in 1899 by Monro (at the time known by her maiden name, Jordan) at the Sixth Summer Meeting of the The American Association to Promote the Teaching of Speech to the Deaf (Northampton, MA), an organization under the leadership of association president Alexander Graham Bell. The paper, titled "Rhythm as an Aid to Speech," provides insight into best practices in rhythm training at the time. Monro began the paper with the following acknowledgement:

> We are not yet ready to speak of music in the education of the deaf, that is, music in the general [acceptance] of the term, but we know that the deaf are moved by

> concord of sounds and it is with rhythm, that necessary element of music, that which goes to make up the concord of sounds, that my paper has to do.[42]

After establishing the contemporary state of rhythm training, Monro continued to discuss her successes incorporating music into speech lessons at the Horace Mann School for the Deaf in Boston, MA. Monro describes using a large pipe organ and a piano during speech instruction. By feeling the vibrations through the wooden housing of the pipe organ, Monro's pupils were able to experience changes in pitch and were able to gain increased flexibility in the pitch of their speech. Yet, after multiple years of experience with rhythm training, Monro believed that the piano provided more potential for speech training because the percussive nature of the instrument magnified rhythmic patterns. Monro encouraged the use of the piano in speech training, stating:

> This instrument has enabled us to obtain results which are evident in the rhythm of the habitual speech of the pupils, in the modulation of their voices, in the freedom of tone, and also in greater volume without the physical exertion that the pupil is liable to make when he receives the vibration from his teacher.[43]

Monro also described the practice of reciting the lyrics of popular songs (such as "America," "The Star Spangled Banner," and "Home Sweet Home") set to the rhythms of nursery rhymes from *The Mother Goose* with her students.[44]

From February of 1900 to February of 1918, Monro authored five of the seven articles discussing music training for DHH students in *The Association Review*/*The Volta*

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[42] Sarah Allen Jordan (Monro), "Rhythm as an Aid to Voice Training," *The Association Review*, Vol. 2, No. 1 (Feb 1900): 16.

[43] Ibid., 19.

[44] Ibid., 18-19.

Review and the *American Annals of the Deaf* (two of the most prominent journals for the Deaf at the time). Dates and titles of all seven articles are available in Table 2.

Table 2. Rhythm Articles, Feb. 1900 – Feb. 1918.

Year	Title	Author	Publication
1900 (Feb)	“Rhythm as an Aid to Voice Training”	Sarah Allan Jordan	*The Association Review* (now *The Volta Review*), Vol. 2, No. 1
1901 (Mar)	“The Piano as an Aid to Speech”	Sarah A. Jordan Monro	*American Annals of the Deaf*, Vol. 46, No. 2
1912 (Mar)	“Musical Vibrations for the Deaf”	Sarah Harvey Porter	*American Annals of the Deaf*, Vol. 57, No. 2
1915 (Apr)	“A Resume of the Rhythmic Work in the Horace Mann School, Boston”	Sarah A. Jordan Monro	*The Volta Review*, Vol. 17, No. 4
1915 (Nov)	"The Priceless Value of Rhythm to Deaf Children”	Sarah A. Jordon Monro	*The Volta Review*, Vol. 17, No. 11
1917 (May)	“Rhythm"	Millicent Bowen Fuller	*American Annals of the Deaf*, Vol. 62, No. 3
1918 (Feb)	"A Plea for the Use of the Piano in Speech and Voice Work”	Sarah A. Jordon Monro	*The Volta Review*, Vol. 20, No. 2

One of Monro’s more detailed articles, “A Resume of the Rhythmic Work in the Horace Mann School, Boston” (1915), is valuable for its historical account of the earliest formal rhythm training programs for DHH students. Monro states that “Alexander Graham Bell showed his appreciation of [rhythm training’s] importance, for he gave it a prominent place in the program of work for his training class for teachers of the deaf in

the year 1875."[45] Furthermore, Monro describes how her enthusiasm for rhythm education was inspired by papers that detailed Bell's work in the area, and she claims that Bell's vocal physiology class at Boston University was the first to provide a systematic training program in this new "branch of the education of the deaf."[46]

Influenced by Bell's work, Monro began incorporating rhythm studies in her speech classes at the Horace Mann School for the Deaf in 1895.[47] Monro also described an instance when Bell visited the Horace Mann School (soon after she began incorporating the piano) to observe her lessons and to discuss her newly developed curriculum of rhythm exercises. According to Monro, Bell was supportive of her teaching methods, and as a result of Bell's encouragement, the Horace Mann School decided to dedicate more time to rhythm training.[48] As the Horace Mann School continued to refine its rhythm program, other schools for the deaf looked to the institution as a model. According to Monro,

> Among the large number of teachers of the deaf who visited the school as time went on were many who were much interested in the rhythmic work, and especially in that with the piano and the other instruments, for their use in a school for the deaf was entirely new to them. Some of these teachers and others who studied with the writer in her summer classes so far appreciated its value as to introduce it into their work.[49]

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[45] Sarah Allen Jordan Monro, "A Resume of the Rhythmic Work in the Horace Mann School, Boston," *The Volta Review*, Vol. 20, No. 2 (Feb 1918): 133.

[46] Ibid.

[47] Ibid.

[48] Ibid., 137.

[49] Ibid.

Rhythm training was consistently taught around a piano, and exercises were mainly structured around rhythmic and accent patterns. Students were asked to place their hands on the body of the piano and repeat rhythmic patterns performed by the instructor. Students would begin by repeating the patterns with their bodies (by tapping their feet or clapping their hands) and would move on to vocalizing the rhythmic patterns. In a 1915 article titled "The Priceless Value of Rhythm to Deaf Children," Monro states that accent and rhythm are more important aspects of speech than correct pronunciation.[50] Thus, much of the early work in music education is focused around accent and rhythm, and the basic format established by Monro (the use of rhythm, nursery rhymes, and the piano) remained consistent in other music programs across the country.

As rhythm training became more common in American schools for the deaf and more time during the typical school day was dedicated to rhythm training, instructors began to expand upon Monro's format by placing more emphasis on pitch recognition. In 1917, Millicent Brown Fuller described a rhythm training process that included pitch and volume discrimination:

> It is the aim in the beginning to secure involuntary coordination of mind and body; so the child is first led to recognize or distinguish the intensity of the impulse of beat as noticed in the different pitches, and then to imitate the same by clapping his hands either hard or lightly or tapping his foot in the same manner. This idea is extended further until he can imitate with his own voice in accent the difference in the pitch used. A good foundation is thus prepared for his easy and attractive articulation of words which will illustrate each line of accent pursued.[51]

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[50] Monro, "The Priceless Value of Rhythm to Deaf Children," *The Volta Review*, Vol. 17, No. 11 (Nov 1915), 438.

[51] Millicent Bowen Fuller, "Rhythm" *American Annals of the Deaf*, Vol. 62, No. 3 (May 1917), 269.

Over the next eighteen years (from March 1918 to March 1936), over thirty different authors contributed at least thirty-seven articles addressing rhythm exercises in *The Volta Review* or the *American Annals of the Deaf*. Furthermore, during this same time period, three Master's theses (two by students at Gallaudet College and one by a student at Ohio State University) were centered around teaching music and rhythm exercises in deaf schools. (A complete table of published and unpublished works from 1900-1960 is available in the APPENDIX.) Just as oralism swept the country during the first three decades of the twentieth century, the popularity of rhythm studies increased quickly, spreading from the Boston area to the rest of the country. The increased use of rhythm training in schools for the deaf coincides with the spread of the oralism movement.

While not all deaf students responded positively to music training, by the 1930s many educators at oralist schools were convinced of the effectiveness of rhythm training. During the 1920s and '30s, *The Volta Review* published numerous articles intended to persuade the reader of the effectiveness of rhythm programs. In 1930 Jennie M. Henderson reported on the benefits of rhythm training in the article "The Awakening of Latent Hearing by Means of Musical Tones and Vibrations." She observed the following four benefits of using rhythm exercises with deaf students: "1) more natural speech and voice production, 2) more graceful physical movements (walking, etc.), 3) increased alertness, and 4) increased sociocultural awareness."[52] These benefits were re-articulated through written articles and public demonstrations held by other educators across the country.

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[52] Jennie M. Henderson, "The Awakening of Latent Hearing by Means of Musical Tones and Vibrations," *The Volta Review*, Vol. 32, No. 4 (April 1930): 186.

Encouraged by positive results in the form of speech improvement, some instructors increasingly began to incorporate music-making activities. These exercises often required students to identify and vocally replicate pitch variations. This use of pitch through singing exercises contrasted more rudimentary exercises that focused on rhythm —exercises described as "choral speaking" by oralist educators. For these newer activities, rhythm teachers developed a repertoire of songs that were easily accessible to DHH students. In 1956, Meredith Jane Smith, an elementary school teacher at the Newark Day School (Newark, NJ) published four songs in *The Volta Review* specifically composed for use with elementary age DHH students. According to Smith,

> The songs were written to help meet the need for rhythmic expression as well as stimulate language development and provide material for auditory training in the primary grades in Newark Day School, Newark, N.J. In writing the material three major criteria were kept in mind: (1) Is it meaningful to the children? (2) Is the vocabulary within the scope of their speech abilities? (3) Is this of interest to the children?[53]

Even though it appears that Smith was mainly concerned with the vocabulary of the lyrics, the melodies of the songs were also printed in the journal with standard music notation. The songs are short (from twelve to seventeen measures long), and the lyrics contain a limited vocabulary with phrases repeated often. Melodic motion is often step-wise or oblique, but skips outlining the root triad are also common. There is even one instance of a minor seventh leap. The origin of the melodies is unknown. They may have been adapted by Smith or newly composed. It is also noteworthy that all the songs are in simple meter. Along with many other rhythm teachers, Smith described using nursery

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[53] Meredith Jane Smith, "Songs for the Primary Grades," *The Volta Review,* Vol. 58, No. 6 (June 1956), 253.

rhymes in her rhythm classes. However, many common nursery rhymes are in compound meter (e.g. "Hickory, Dickory, Dock") while the songs included in Smith's article were in simple meter.

Rhythm/Toy Orchestras

Shortly after rhythm activities were added to the curriculum at schools for the deaf, teachers began incorporating rhythm orchestras (also called toy orchestras or percussion orchestras). Widely popular in the late 1920s and '30s, the rhythm orchestras were modeled after percussion orchestras commonly found in American public schools.[54] At many public elementary schools, hearing students reinforced newly learned musical concepts through participation in percussion orchestras. While the anticipated outcomes of rhythm orchestras in schools for the deaf were different, the ensembles did resemble those formed in public schools.

Inexpensive to implement, the instruments used in rhythm orchestras were cheap and could be created from "found objects." Common instruments included small drums, triangles, tambourines, bells, and cymbals.[55] In 1926, Edith Radcliffe described the process of forming a rhythm orchestra for DHH students, beginning with preliminary counting exercises (implemented without instruments) that were used prior to the introduction of the rhythm instruments. These preliminary exercises focused on body movements (such as clapping) and were used to help DHH students understand the

[54] Edith Radcliffe, "Percussion Orchestra," *The Volta Review*, Vol. 28, No. 2 (February 1926): 93.

[55] Ibid.

concept of rhythm and musical time before adding the extra layer of playing an instrument.[56]

Overall, oralist reports show that DHH students widely enjoyed participation in rhythm orchestras. Instructors observed both the cathartic and educational benefits of the ensembles. Finding that participation in rhythm orchestras garnered similar outcomes as allowing students recess time, rhythm orchestras were strategically placed to break up the monotony of the school day. Furthermore, as rhythm instructors began to observe improvements in the posture and physical deportment of DHH students who participated in rhythm orchestras, a new branch of rhythm exercises was incorporated—eurythmics.[57] In 1937, Mary R. Van Nest published an article title "Eurythmics" in *The Volta Review* describing a class offered at the Lexington School for the Deaf in New York. This course was a collaborative effort between the physical education and rhythm departments at the school and incorporated standard rhythm exercises along with embodied rhythmic movements such as skipping, running, or dancing.[58]

While instructors expanded the scope of rhythm training and recognized the added benefits of rhythm orchestras, they remained focused on the primary outcome of the activity—improved speech. According to Radcliffe, the ultimate goal of the rhythm orchestras was to develop a sense of rhythm that would help "destroy the terrible

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[56] Ibid.

[57] Developed in the early twentieth century by the Swiss musician and music educator Émile Jaques-Dalcroze, eurythmics (also known as the Dalcroze Method) teaches musical concepts through physical movement.

[58] Mary R. Van Nest, "Eurythmics," *The Volta Review,* Vol. 39, No. 6 (June 1937), 337.

monotony too prevalent in the voices of the deaf, and serve as a foundation for more complicated forms of speech drill."[59]

Military/Brass Bands

While they were uncommon at American schools for the deaf, four schools did offer military or brass bands at some point during the first half of the twentieth century: 1) the Illinois School for the Deaf, 2) the New York Institution for the Deaf, 3) the Tennessee State Deaf School, and 4) the Minnesota School for the Deaf. There are few remaining accounts of some of these bands, while the most is known about the Illinois School for the Deaf (ISD) Band due to the work of Deborah A. Sheldon. Sheldon's 1997 article in the *Journal of Research in Music Education* advocates for music for the deaf and in doing so, provides a detailed historical account of the Illinois band.[60]

The New York Institution was one the first schools for the deaf in the U.S. to institute a band program. The principal, Enoch Henry Currier, first began the program with a single drummer used to assist the students in the performance of military-style marching drills.[61] (In an effort to improve discipline at the school, the institution had been re-organized as a military school years earlier.[62]) Shortly after the addition of the drummer, the students were able to perform the drills with a high level of military

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[59] Radcliffe, 93-94.

[60] Deborah A. Sheldon, "The Illinois School for the Deaf Band: A Historical Perspective," *Journal of Research in Music Education*, Vol. 45, No. 4 (Winter 1997): 580-600.

[61] "Music for the Deaf," *The Literary Digest*, Vol. 49, No. 7 (August 1914): 269.

[62] A.C. Hill, "From the Note-book of an Inspector," *The Volta Review*, Vol. 20, No. 6 (June 1918), 315.

precision. Currier added fifes and bugles, and by 1914, the band program had grown to forty to fifty student musicians. A 1914 report in the *Literary Digest* declared that the band (consisting of cornets, alto horns, b-flat tenors, b-flat baritones, e-flat basses, trombones, snare drum, cymbal, and bass drum) had a repertoire of 185 musical works and that "the execution of the band is so good that it is often invited to participate in high-grade concerts given by hearing musicians in New York City."[63]

According to a 1918 article in *The Volta Review*, Currier was at first ridiculed for organizing the band.[64] However, the program's successes attracted national attention, and the program was replicated at other schools across the country. Oscar C. Smith was one of the educators inspired by the New York Institute Band. To begin a band program at the Tennessee State Deaf School, he hired Fred Fancher as bandleader. Later, Smith also founded a similar program at the Illinois School for the Deaf, where he again recruited Fancher to lead the band.[65]

At the time, the popular media often described these bands as "deaf bands," declaring that the musicians could not hear the music they produced. For example, a *Ladies' Home Journal* author declared in 1918 that the members of the New York Institution Band were all "stone deaf" and that "despite the fact that its members cannot hear a note of the music which they play, the band is considered one of the best in New

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[63] Ibid.

[64] Ibid.

[65] Sheldon, 583-584.

York City and is in constant demand to play at public functions."[66] Yet, many of the members of the bands at schools for the deaf across the country had residual hearing and most could feel the vibrations from the instruments. In fact, according to Sheldon, Fancher "drew his musicians from students who had some residual hearing or who demonstrated good rhythm and time."[67] The bands were formed as extensions of rhythm programs already in place at the schools for the deaf and/or as extensions of military marching programs at schools that embraced military traditions. The bands were often embraced by students and educators alike for providing enriching opportunities for student travel (in some cases across the country) and for improving student morale.

Technological Advancements

Technological advancement during the 1920s widened the gap between the Deaf and hearing communities. Radio culture was inaccessible for many DHH individuals, and beginning in 1927, the intimate association of recorded sound with feature films excluded DHH individuals from the full cultural experience of the "talkies." Additionally, as the automobile became increasingly popular on American streets, DHH individuals started the seemingly continuous fight to retain their rights to a driving license. However, oralist educators embraced audio technology and found innovative ways to use the technology during speech training at schools for the deaf.

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[66] "The Band Cannot Hear a Note That It Plays," *The Ladies' Home Journal*, Vol. 13, No. 4 (November, 1918): 137.

[67] Sheldon, 584.

Recorded Music & Radio

Beginning in the 1920s, phonographs, radios, and other amplification devices were integrated into rhythm classes. At most schools, recorded music supplemented rhythm work at the piano and in rhythm orchestras. Recorded music increased the diversity of sonorities available to DHH students, and the students could feel the vibrations of the music by placing their hands on the housing of the amplification device. Early on, recordings of marches, such as the popular records by John Phillip Sousa's bands, were commonly used in rhythm classes due to their loud dynamics and cleanly accented rhythms. However, as records became more common in the classroom, instructors began to introduce a variety of genres.

Mabel W. Sandberg, a rhythm and physical education teacher at the Agassiz School for the Deaf (Minneapolis, MN), used recordings to teach DHH students about different instruments and musical ensembles.[68] After listening to records through headphones, Sandberg's students learned to distinguish different musical genres and different musical instruments. According to Sandberg, her students could distinguish between bands and orchestras, identify individual instruments, describe textures (solo vs. duet), and distinguish voice types.[69] These analytic abilities encouraged teachers to widen music curricula, and their goals expanded beyond speech improvement.

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[68] Mabel W. Sandberg, "Rhythms and Music for the Deaf and Hard of Hearing," *The Volta Review*, Vol. 56, No. 6 (June 1954): 256.

[69] Ibid.

The Gault Teletactor

The Gault Teletactor, an electronic communication apparatus invented by the psychology professor Robert H. Gault, consisted of three major parts: a microphone, an amplifier, and a hand-held receiver (or vibrator). Developed at the laboratories of Northwestern University during the late 1920s, the device was invented with the hopes of "teaching the deaf to interpret speech and music by the vibrations perceived through the sense of touch."[70] Sounds input through a microphone were amplified and transferred to a hand-held receiver in the form of vibrations. In order to facilitate an entire classroom of students, up to forty receivers could be connected to one microphone, and the vibrations could be selectively output through chosen receivers.[71] With the microphone placed on the desk of the instructor, the instructor could control which students received the signal.

The Teletactors were mainly used to help students improve lip-reading and speaking skills. Since students could feel the vibrations of speech through the hand-held receiver, the natural rhythms of speech could be experienced directly. Thus, the Teletactor had the potential of replacing musical instruments—vibrators that previously were intermediaries between DHH students and optimal speech. However, some oralist educators continued to find music helpful during speech classes, and the Gault Teletactor opened a door to a wider range of musical experiences. The device allowed DHH students to experience the distinct vibrations of a wide variety of instruments, beyond the

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[70] Louis D. Goodfellow and Albert Krause, "Apparatus for Receiving Speech Through the Sense of Touch," *Review of Scientific Instruments*, Vol. 5, No. 1 (Jan 1934): 44.

[71] Robert H. Gault, "The Use of the Sense of Touch in the Development," *The Volta Review*, Vol. 36, No. 2 (Feb 1934): 82; Alice N. Plouer, "The Gault Teletactor at the Illinois School," *The Volta Review*, Vol. 36, No. 2 (Feb 1934): 83.

percussive instruments that could be felt easily through acoustic vibrations. According to Gault "changes in pitch can be detected by touch alone when the actual change involved is only 2.5% of the number of vibrations per second" (this would be less than a half-step deviation from A440).[72] During preliminary testing, Gault also stated that musical harmonies could be communicated through the hand-held receiver, and he suggested that the device could be used in music appreciation classes.[73]

In 1931 the Illinois School for the Deaf formed a class that used the Gault Teletactor. In addition to supplying students in the class with the standard hand-held device, students also wore headphones that amplified the sound picked up by the microphone. The headphones functioned as hearing aids for students that had some residual hearing. The instructors found that the addition of "musical toys" (percussion instruments such as those used in toy orchestras) into the Teletactor sessions helped to engage the students and "teach them to listen."[74] At the Illinois School specially adapted Victrola records were also used with the Teletactor for rhythm training exercises. Widening the spectrum of musical experiences available to DHH students, the Gault Teletactor was used as a replacement for the piano in rhythm training classes at schools that could afford the technology.

The Coyne Voice Pitch Indicator

The Coyne Voice Pitch Indicator was an electronic device brought to the U.S. from oversees and lauded for its abilities to improve vocal control for DHH students. The

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[72] Gault, 82.

[73] Ibid., 83.

[74] Plouer, 83.

device, similar to a modern electronic tuner, consisted of a microphone, electro-magnetically operated tuning forks, and light bulbs. As an individual spoke or sang into the microphone, the sound was "translated into electrical impulses which [were] then amplified and applied to a series of electro-magnetically operated tuning forks."[75] The tuning fork that matched the pitch of the voice would vibrate, and a light bulb connected to that specific tuning fork would be illuminated. The device was developed by A. E. Coyne, a lecturer at the Engineering Department of the Cape Technical College, Cape Town (South Africa). Coyne and his wife experimented with using the device as a "self educator for the deaf child" at schools in Cape Town and Johannesburg.[76] Coyne found that the device was especially useful in helping DHH students produce strong voices, because "breathiness or wobbling" of the voice caused the light bulbs to flicker.[77] The device also helped students develop pitch control and inflection when speaking.

In a 1938 *Volta Review* article, A. E. Coyne described vocal exercises that could be performed with the Coyne Voice Pitch Indicator.[78] Consistent with those used for singing, these vocal exercises resembled activities used previously by rhythm instructors. However, because it provided students the opportunity to see instantaneous feedback from the light bulbs, the Coyne Voice Pitch Indicator increased the efficiency and effectiveness of these exercises.

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[75] "The Coyne Voice Pitch Indicator," *The Volta Review*, Vol. 40, No. 8 (August 1938): 437.

[76] Ibid.

[77] Ibid., 438.

[78] A. E. Coyne, "More About the Voice Pitch Indicator," *The Volta Review*, Vol. 40, No. 10 (October 1938): 551-552.

A. V. Uden's Electronic Wind Instrument

During the early 1950s, A. V. Uden, the principal of the Institute for the Deaf at St. Michielsgestel (The Netherlands), demonstrated an electronic wind instrument in the U.S. The electronic wind instrument was developed by an engineer (identified as Mr. Vermeulen) at the Physics Laboratories of N. V. Philips at Eindhoven.[79] The instrument consisted of a mouthpiece connected to a tube through which air was blown. The tube was connected to a keyboard of twenty-five keys, and a copper tongue would vibrate when its corresponding key was pushed.[80] The sound could then be amplified (without the use of a microphone) through large speakers and/or headphones, and group play could be facilitated by amplifying up to twelve instruments at a time. The range of the instrument mimicked the range of the human voice, and the instrument was designed to be more accessible than traditional wind instruments.[81]

The electronic wind instrument replaced the clarinet at St. Michielsgestel, which DHH students studied previously because of its capacity to send vibrations through the lips and the chest.[82] According to Uden, the electronic wind instrument served the following purposes in preparing students for speech lessons:

> To establish in children, from childhood (beginning in the first class of infant-school, even before the speech lessons commence) a coordination between: a) the direction and control of the breath, the position and adaptability of the chest, the feeling for rhythm, and the control of the whole motor-ability, on the one hand,

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[79] A. V. Uden, "An Electrical Wind-Instrument for Severely or Totally Deaf Children," *The Volta Review*, Vol. 55, No. 5 (May 1953): 241-242.

[80] Ibid., 242.

[81] Ibid.

[82] R. Vermeulen, "A Musical Instrument for Deaf-Mute Children," *Philips Technical Review,* Vol. 18, No. 9 (February 1957), 276.

> and b) the hearing, eventually feeling, of vibrations, as well in their own ears by means of headphones, as in feeling through the whole body by means of loudspeakers, on the other.[83]

Uden believed that this coordination prepared DHH students for the demands of speech and that practice on the electronic wind instrument yielded a better "feeling for the intonation-curve of speech."[84] More accessible than the clarinet, the device was used to teach both rhythm and pitch exercises, and he promoted the device for use in U.S. schools.

The Clavilux

Introduced in 1922 by Thomas Wilfred, the clavilux (a type of color organ) was one of the earliest electronic instruments to find its way into American Deaf culture. Although philosophers had discussed the relationship between music frequencies and light spectrum for centuries (Aristotle, *De sense et sensibilibus*, 439b-442a), the development of electricity led to invigorated experimentation within this realm during the first decades of the twentieth century. Wilfred's original clavilux consisted of an organ (often with three manuals) that was connected to a device that projected light through colored lenses onto a large background.[85] Unlike other color organs, the clavilux only produced a colorful visual experience and did not produce sound.[86] Following the early success of the instrument, Wilfred manufactured a home version of the clavilux, which

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[83] Uden, 241.

[84] Ibid.

[85] Rodrigo Carvalho, "From Clavilux to Ufabulum," *Journal of Science and Technology of the Arts*, Vol. 5, No. 1 (2013): 44.

[86] Earlier color organs include Scriabin's *clavier à lumières* invented for use during a 1915 performance of *Prometheus: Poem of Fire.*

included a hand-held keyboard and a projection screen about the size of a thirty-inch, modern-day television.

Although this device was not used in an effort to advance speech and there is little evidence that it was routinely used in schools for the deaf, it did provide DHH individuals with another way to experience music. In a 1929 article in the *Volta Review*, Bryna Shklofsky expressed high hopes for the instrument, stating, "it is reasonable to expect now that we shall have soon something in the way of entertainment that will offset for a great many of us the wonders of the radio and that latest 'nuisance'—the talking and singing movie."[87]

Crossing the Divide: Music Education and Music Therapy

As oralist educators at schools for the deaf began to rely more on new technologies such as microphones, amplification devices, and hearing aids, music programs and rhythm training began to garner less attention. The primary goals of the oralist education was speech training, lip-reading, and cultural assimilation, and oralists had discovered an improved training method for helping DHH students achieve these goals—acoustical training. Through acoustical training, DHH students interacted with sound through the electronic intermediaries of microphones, amplifiers, and/or other devices that electronically transferred sound into distinguishable vibrations. The piano and other percussion instruments were soon amplified or replaced by a myriad of technologies that directly conveyed the vibrations of speech.

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[87] Bryna Shklofsky, "Music for the Deafened," *The Volta Review*, Vol. 31, No. 6 (June 1929): 290.

The declining attention garnered by rhythm programs at oralist schools during the 1940s is evidenced by the reduced number of articles concerning music in *The Volta Review*. From the perspective of oralist educators, the use of music as a tool had run its course. However, when oralists began to transfer their focus from rhythm training to acoustical training during the 1940s, music educators and music therapists continued to pursue research within the field. They recognized and valued the many different ways that music training benefited DHH students, and they continued to research, write about, and implement programs in public schools long after the oralism movement waned in the U.S. Yet, while music educators and music therapists valued music for its experiential process, signs of the functional use of music still remained in regards to music programs for DHH individuals.

Music training for DHH students formally entered the wider realm of public school music education during the 1930s. Karl Wecker, conductor of the Grand Rapids Symphony Orchestra and the State Director of the Federal Music Project (FMP) in Michigan, wrote an article titled "Music for Totally Deaf Children" which was published in both the March, 1939 issue of the *American Annals of the Deaf* and the May, 1939 issue of the *Music Educators Journal*.[88] The purpose of the article was to describe the Federal Music Project's "recently initiated experiments in cooperation with the Lansing public schools to determine whether the completely deaf child could be brought to an

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[88] The latter is the primary journal of the American music education organization known today as the National Association for Music Education (NAfME).

appreciation of music, and, through appreciation, to a self expression in music somewhat approximating that of the normal child."[89]

The program administrators experimented with the amplification of music from a live orchestra, transmitted through headphones worn by DHH students. The administrators of the program observed the students' comprehension of various rhythmic patterns and pitches performed by the orchestra. While the writer acknowledged that not all students responded to the amplified music, he believed "an unescapable conclusion from these experiments was the fact that deaf children can readily be trained to react to pitch changes… if a deaf child can but react to a very narrow range of pitch differences, he can be taught to speak with the same natural voice inflections used by a person with normal hearing."[90] Thus, Wecker reinforces the claims made by oralist educators at schools for the deaf. However, he completely disregards the previous forty years of activity in rhythm training seen at schools for the deaf.

The study of music for DHH students was revisited at the 1947 Music Teachers National Association conference. However, this time the discussion was led by an educator of DHH students. The *Volume of Proceedings* for 1947 included an article by Helen S. Lane, principal of the Central Institute for the Deaf (St. Louis, MO). Reaching a wide audience of music educators, the article ("Rhythm for the Deaf") summarized the rhythm program at the Central Institute. The author provided a list of ways that music had

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[89] Karl Wecker, "Music for Totally Deaf Children," *Music Educators Journal*, Vol. 25, No. 6 (May 1939), 45-47. The Federal Music Project (FMP) was founded during the Great Depression under Franklin D. Roosevelt's economic strategy known as the New Deal. The FMP funded public concerts, music classes, and hired musicians, composers, and conductors.

[90] Ibid., 47.

proved useful in the education of students at the Central Institute, which included improved speech, behavior, bodily control, and improved social interactions of DHH students.[91] This article is one of few written by an educator of DHH students that appeared within a journal for hearing musicians/music educators.

In 1953, three years after the founding of the National Association for Music Therapy, Mildred Dattilo wrote a short article for inclusion in the organization's bulletin. Dattilo, a rhythm teacher at the New Jersey School for the Deaf (Trenton, NJ), described the New Jersey school's structured approach to rhythm training, in which students systematically advanced through a rhythm training curriculum. Within the program students progressed sequentially from "spontaneous" interactions with rhythms played on the piano (kindergarten and first grade) to the singing of simple songs and recitation of nursery rhymes during the fourth and fifth grade.[92] Datillo also discussed the school's rhythm band and rhythmic gym program. Although brief, Dattilo's article provides a compelling argument for rhythm training and formally introduced the advanced state of rhythm training programs (developed in schools for the deaf over the first half of the twentieth century) to music therapists. Furthermore, the basic structure of the program described by Dattilo was comparable to the methods developed and promoted by Monro and Bell half a century earlier. Grounded in oralism, the historical tenets of the movement rooted DHH musical encounters and educational programs within the realm of utility rather than experience.

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[91] Helen S. Lane, "Rhythm for the Deaf" in *Volume of Proceedings*, ed. Theodore M. Finney (Pittsburgh: Music Teachers National Association, 1947), 64.

[92] Mildred Dattilo, "Music for the Deaf," *Bulletin of NAMT*, Vol. 2, No. 2 (May 1953): 5.

CONCLUSIONS: AN ISSUE OF VALUES

While philosophies surrounding methods for deaf education have evolved considerably since the first half of the twentieth century, the debate between oralism and manualism still persists in today's society. In addition, though total communication is now the gold standard for the education of DHH students, cochlear implant technology has added yet another layer to an already complex issue. On one hand, cochlear implants have helped DHH individuals appease the cultural norms of the hearing world and have made hearing available to some previously DHH people. But on the other, some have rejected them as inconsistent with the established cultural norms and values of the Deaf community.

Connected by shared experiences, goals, and attitudes, the Deaf community now does not view deafness as a disability, but rather as a personal trait to be valued and accepted. Thus, the community finds little benefit in the technological and surgical erasure of a trait that has led to the creation of a dynamic language and vibrant culture. As discussed by Laraine Mangan, cochlear implants present the following commonly debated questions: "Are those who receive cochlear implants cutting their ties to the Deaf community? Should parents have the right to choose to give their children cochlear implants? Is funding being unevenly distributed between cochlear implant research and technology and other services necessary to deaf individuals, in favor of cochlear

implants?"[93] Similar questions are also relevant to the assimilation aspects of music programs for DHH individuals.

While many articles published by *The Volta Review* and in local newspapers during the first half of the twentieth century proclaimed the benefits of music programs for DHH students, these articles do not represent objective positions in the oralism vs. manualism debate. It is important to acknowledge that early music programs developed for DHH students were primarily intended to promote speech and to modify external markers of deafness. Additionally, these music programs were utilized by a movement that has been criticized by the Deaf community for failing to educate young DHH individuals.[94] While striving for what they believed was the best outcome for the young people enrolled in their schools, oralist educators failed their students by imposing their own values learned through experiences living in the hearing world. Typically for the era, "normal and natural" was considered best; disabilities were seen as problems that required repairing. Furthermore, rhythm teachers were motivated by parents who desired to form bonds with their DHH children and by parental desire to "do what's best" for their children, regardless of available supporting scientific evidence.

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[93] Laraine Mangan, "Social Norms within Deaf Culture," PennState: Department of Agricultural Economics, Sociology, and Education, accessed 20 October, 2017, http://aese.psu.edu/students/research/ced-urj/news/2014/social-norms-within-deaf-culture.

[94] In the 1983 book *The Other Side of Silence: Sign Language and the Deaf Community in America* by Arden Neisser, the author claimed that oralist teachers were usually unsuccessful with only ten percent of their students mastering intelligible speech. Neisser went on to claim that by age five children who grew up learning ASL had a vocabulary thousands of words larger than children who were taught by the oralist method.

The music programs initiated by oralist educators served assimilation ideals. For example, many of the exercises that involved pitch discrimination were intended to help students mimic the pitch contour of the speech of hearing persons. As described earlier, exercises were established to “destroy the terrible monotony too prevalent in the voices of the deaf.”[95] Rhythm exercises in place during the first half of the twentieth century went beyond helping DHH students establish a viable method of communication with hearing persons, and rhythm teachers attempted to mold voices in a way that removed audible signs of deafness. Rhythm teachers and those who taught rhythm orchestras and eurythmics often discussed the importance of DHH students’ verbal and physical presentation. Prominent aspects of cultural assimilation, physical appearance and language are often the first signifiers of an individual’s deviation from cultural norms. My review of oralist music programs in the U.S. revealed that rhythm teachers pursued a consistent set of student outcomes aligned with the cultural norms of hearing society.

Music education for DHH students has progressed since the first half of the twentieth century, especially within the context of pairing sign language with singing (which has shown evidence of receptive language benefits).[96] However, similar questions asked in the debate over cochlear implants are relevant when considering the development of music programs for DHH individuals. Could time dedicated to music programs for DHH individuals be at the expense of other valuable opportunities? Are

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[95] Radcliffe, 93.

[96] Researchers contributing to this evidence include Patricia Ivankovic and Ingrid Gilpatric (1994) and Heather A. Schunk (1999).

music programs for DHH individuals beneficial to the Deaf community or do they promote assimilationist ideals? Since the majority of musicians and music educators are hearing individuals with rather limited contact with the Deaf community, it would be easy to apply external cultural norms upon a community that operates under a different set of established rules. The inclusion of deafness in musicology "as a diverse set of experiences within the full spectrum of listening" (as suggested by Jessica A. Holmes) may provide music therapists and music educators with another reference point when considering the value of music programs for DHH individuals.[97]

In his book, *Extraordinary Measures: Disability in Music*, Joseph Straus groups critical responses to disability into four different models.[98] The oralists tailored their music programs in accordance to Straus's third model of disability: "a medical defect to be overcome or cured."[99] Yet, the Deaf community has long embraced the ideals of Straus's fourth model, centered on "the recently developed notion of disability as personal, cultural, and social identity affirmation."[100] The fact that this development is so recent explains, in part, the relative absence of writings about deaf music education by deaf individuals. In addition, DHH people may not choose or be encouraged to study

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[97] Holmes, 220.

[98] Joseph N. Straus, *Extraordinary Measures: Disability in Music* (Oxford: Oxford University Press, 2011).

[99] Shersten Johnson, "Extraordinary Measures: Disability in Music," *Music Library Association: Notes*, Vol. 68, No. 3 (2012): 599. Other commonly discussed models of disability include the religious model (through which disability is viewed as punishment for sinful acts) and the tragic model (disabled individuals are viewed as victims of circumstance who are deserving of pity).

[100] Ibid.

music in higher education, a step which might potentially lead to more robust research written by members of the DHH community. Until this situation changes, Straus's guidance and educational perspectives that recognize deafness as an artistic medium must suffice as catalysts for others to expand the ways that music is discussed as a "spectrum of listening." A reframed perspective on the oralist-led utilization of music in deaf education from 1900 to 1960 offers critical perspectives when considering the impact of music programs developed for the enrichment of DHH individuals. My sincere hope is that the DHH community itself will soon lead the field in the creation of new DHH music curricula.

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APPENDIX

A TABLE OF PUBLISHED & UNPUBLISHED WORKS:

RHYTHM EXERCISES & RHYTHM ORCHESTRAS (1900 - 1960)

Table 3. Published & Unpublished Works: Rhythm Exercises & Rhythm Orchestras (1900 - 1960).

Year	Title	Author	Publication
1900 (Feb)	“Rhythm as an Aid to Voice Training”	Sarah Allan Jordan	*The Association Review* (now *The Volta Review*), Vol. 2, No. 1
1901 (Mar)	“The Piano as an Aid to Speech”	Sarah A. Jordan Monro	*American Annals of the Deaf*, Vol. 46, No. 2
1912 (Mar)	“Musical Vibrations for the Deaf”	Sarah Harvey Porter	*American Annals of the Deaf*, Vol. 57, No. 2
1915 (Apr)	“A Resume of the Rhythmic Work in the Horace Mann School, Boston”	Sarah A. Jordan Monro	*The Volta Review*, Vol. 17, No. 4
1915 (Nov)	"The Priceless Value of Rhythm to Deaf Children”	Sarah A. Jordon Monro	*The Volta Review*, Vol. 17, No. 11
1917 (May)	“Rhythm"	Millicent Bowen Fuller	*American Annals of the Deaf*, Vol. 62, No. 3
1918 (Feb)	"A Plea for the Use of the Piano in Speech and Voice Work”	Sarah A. Jordon Monro	*The Volta Review*, Vol. 20, No. 2
1918 (June)	“Voice Training for Deaf Training”	Pattie Thomason	*The Volta Review*, Vol. 20, No. 6
1918 (June)	“From the Note-book of an Inspector”	A. C. Hill	*The Volta Review*, Vol. 20, No. 6
1919 (Feb)	"A Demonstration in Voice Training”	Julia M. Connery	*The Volta Review*, Vol. 21, No. 9
1919 (May)	"Musical Rhythms”	Elwood A. Stevenson	*American Annals of the Deaf*, Vol. 64, No. 3
1919 (Oct)	"Voice Building”	Frances L. Duffett	*The Volta Review*, Vol. 21, No. 10

Year	Title	Author	Publication
1920 (Mar)	“To What Extent Should Music Be Introduced in Schools for the Deaf?”	—	*American Annals of the Deaf*, Vol. 65, No. 2
1921 (Apr)	“Rhythm-Work in the Alabama School for the Deaf”	Mary New	*The Volta Review*, Vol. 23, No. 4
1925 (Jan)	“Rhythm"	—	*The Volta Review*, Vol. 27, No. 1
1926	“What Music Means to the Deaf Child”	Maxine Tull	Unpublished thesis, Gallaudet College
1926 (Feb)	“Percussion Orchestra for Deaf Children”	Edith Radcliffe	*The Volta Review*, Vol. 28, No. 2
1926 (July)	“Rhythm”	Irene L. Sandberg	*The Volta Review*, Vol. 28, No. 7
1926 (July)	"The Development of Tone Rhythm”	Wilma Shillady Brady	*The Volta Review*, Vol. 28, No. 7
1926 (Nov)	“An Outline of Rhythm Work”	Marjorie Thornton	*American Annals of the Deaf*, Vol. 71, No. 5
1927 (Mar)	“Word Building at the Piano”	Lucile Burk	*The Volta Review*, Vol. 29, No. 3
1927 (May)	"The Speech Habit”	Lucie M. Lewin	*The Volta Review*, Vol. 29, No. 5
1927 (June)	“Dr. Bell’s Early Experiments Giving Speech to the Deaf”	Caroline A. Yale	*The Volta Review*, Vol. 29, No. 6
1928 (Jan)	"A Project in Rhythm”	Helen Hammer	*The Volta Review*, Vol. 30, No. 2
1928 (Sept)	"Rhythm for Deaf Children of Ungraded Schools”	Gwendolyn Arndt Flanders	*The Volta Review*, Vol. 30, No. 9

Year	Title	Author	Publication
1928 (Oct)	“Demonstration by Jennie Henderson: Speech Voice Work, Auricular Training”	Jennie Henderson	*The Volta Review*, Vol. 30, No. 10
1928 (Oct)	“Training the Deaf to Speak with Modulation”	Oscar Russell	*The Volta Review*, Vol. 30, No. 10
1928 (Oct)	“Demonstrations in Rhythm Work”	Nancy Buchanan Moseley	*The Volta Review*, Vol. 30, No. 10
1929 (Sept)	“Primary and Intermediate Rhythm”	Margaret S. Kent	*The Volta Review*, Vol. 31, No. 9
1929 (Sept)	“Advanced Rhythm”	Edith Radcliffe	*The Volta Review*, Vol. 31, No. 9
1929 (Dec)	"Rhythm in the Kindergarten and Junior Primary Department”	Louise E. Cornell	*The Volta Review*, Vol. 31, No. 12
1930 (Apr)	“Music Appreciation”	Lettie W. McKinney	*The Volta Review*, Vol., 32, No. 4
1930 (Apr)	"The Awakening of Latent Hearing by Means of Musical Tones and Vibrations”	Jennie M. Henderson	*The Volta Review*, Vol. 32, No. 4
1931 (Feb)	“Rhythm"	Margaret B. Ketchem	*The Volta Review*, Vol. 33, No. 2
1931 (Apr)	“The Toy Orchestra”	Bernice Sholdice	*The Volta Review*, Vol. 33, No. 4
1931 (Sept)	"Rhythm Outline”	Maud Carter	*American Annals of the Deaf*, Vol. 76, No. 4
1931 (Sept)	“Rhythm–Out Kindergarten Band”	Gladys G. Jayne	*The Volta Review*, Vol. 33, No. 9
1931 (Oct)	“Voice and Speech Problems”	Sherman K. Smith	*The Volta Review*, Vol. 33, No. 10
1931 (Nov)	“Our Rhythm Band”	Florence Sundstorm	*The Volta Review*, Vol. 33, No. 11

Year	Title	Author	Publication
1932	"The Use of the Piano with the Deaf"	Jennie L. Alexander	Unpublished Master's thesis, Gallaudet College
1932 (Oct)	"Can We Improve the Voice Quality of the Congenitally Deaf"	Sherman K. Smith	*The Volta Review*, Vol. 34, No. 10
1933 (Jan)	"Concerning Rhythm"	—	*The Volta Review*, Vol. 35, No. 1
1934 (Feb)	"The Use of Sense of Touch in Developing Speech"	Robert H. Gault	*The Volta Review*, Vol. 36, No. 2
1933 (Mar)	"Speech"	Beatrice Rierdon	*The Volta Review*, Vol. 35, No. 3
1934 (July)	"Teaching Rhythm Visually"	Beatrice E. Richardson	*The Volta Review*, Vol. 36, No. 7
1935	"Teaching Music to the Deaf in the Elementary School"	Dorothy Jane Lord	Unpublished Master's thesis, Ohio State University
1937 (June)	"Eurythmics"	Mary R. Van Nest	*The Volta Review*, Vol. 39, No. 6
1938 (Apr)	"Rhythm and Personality Growth"	Grace W. McAlister	*The Volta Review*, Vol. 40, No. 4
1939	"Rhythm and Its Relation to the Training of the Deaf"	Gladys G. Jayne	*American Annals of the Deaf*, Vol. 84, No. 2
1939 (Mar)	"Music for Totally Deaf Children"	Karl Wecker	*American Annals of the Deaf*, Vol. 84, No. 2
1939 (May)	"Music for Totally Deaf Children"	Karl Wecker	*Music Educators Journal*, Vol. 25, No. 6
1940 (Sept)	"Values of the Rhythm Orchestra in Schools for the Deaf"	Ruch C. Gay	*American Annals of the Deaf*, Vol. 85, No. 4
1942 (Sept)	"Voice and Rhythm in the Primary Grades of the New Jersey School for the Deaf"	Mary M. Mills	*American Annals of the Deaf*, Vol. 87, No. 4

Year	Title	Author	Publication
1947	“Rhythm for the Deaf”	Helen S. Lane	*Volume of Proceedings for 1947*, Music Teachers National Association (Pittsburgh, PA)
1948 (Jan)	“Gay, Profitable Rhythm Classes”	Dorothy V. Nielsen	*The Volta Review*, Vol. 50, No. 1
1949 (Mar)	“We’ve Got Rhythm”	Anita Cavanagh & Loretta M. Winters	*The Volta Review*, Vol. 51, No. 3
1953 (Mar)	“Our Children’s Heritage”	Louise Unholtz & Katherine Negley	*The Volta Review*, Vol. 55, No. 3
1953 (May)	"Music for the Deaf”	Mildred Dattilo	*Bulletin of The National Association for Music Therapy*, Vol. 2, No. 2
1954 (Jan)	“Choral Speaking by Deaf Children”	Esther Fagan	*The Volta Review*, Vol. 56, No. 1
1954 (June)	“Rhythms and Music for the Deaf and Hard of Hearing”	Mabel W. Sanberg	*The Volta Review*, Vol. 56, No. 6
1956 (June)	“Songs for the Primary Grades”	Meredith Jane Smith	*The Volta Review*, Vol. 58, No. 6
1959 (Oct)	"Music as an Aid in Teaching the Deaf”	Sister Giovanni	*Music Therapy–Proceedings 1959*, National Association for Music Therapy (Lawrence, KS)