receive more information from the environment. If the cane has to be held off to the dominant side, its length should be modified so that it is two to three inches longer but no more than five inches longer in total. Third, the cane tip should be replaced with a roller ball, marshmallow ball, or wheel tip, which are designed to allow the traveler's cane to simply glide over the sidewalk cracks or broken-up sidewalk areas. Fourth, if the client has poor fine motor skills or neuropathy, the use of Stickum is suggested to enhance their grip on the cane. Fifth, when teaching an older adult, it may be wise to integrate the use of a smartphone's digital recorder to record and assist in reinforcing routes or technique modifications. Last, for teaching in winter conditions, the palm of the glove may be removed to continue to give the client maximum feeling and feedback from the environment, and Heat Holders socks may be worn to provide maximum circulation.

All of these modifications and techniques take into account the person's comorbid conditions, environments, and physical limitations. Furthermore, I have employed all of them for 10 older adult clients over a three-year period, and they seemed to strengthen travel skills and independence and to improve self-esteem. In turn, these modifications could potentially allow older clients with visual impairments to experience greater confidence, independence, and mobility while ensuring a better quality of life in the later years.

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Survey of Music Programs at State Residential Schools for Blind Students

Edward P. Kahler, Jeremy M. Coleman, and Della Molloy-Daugherty

Students with visual impairments (that is, those with blindness and low vision) were among the first group of Americans with disabilities to receive a formal music education in the United States (Heller & Livingston, 1994). But much has changed since Lowell Mason, the father of public school music education, accepted his teaching position at Perkins School for the Blind in 1832 (Jellison, 2015). Numerous pieces of legislation have allowed people with disabilities, including the majority of students with visual impairments, to be removed from separate facilities in order to allow them to attend mainstream public schools. The current service model used by some state residential schools for students who are blind allows students to attend those schools on a full-time basis or for a specific duration of time, to achieve their Individual Education Program (IEP) goals, and then the students return to public school in their local districts (Daugherty, 2014). Due to the fact that most students with visual impairments are attending school in their local school districts, current research suggests that music

programs available to students at state schools may be limited (Codding, 2000).

In 1991, an investigation of music programs in those schools suggested that the most frequent music programs available to students were in the form of taking private music lessons or singing in choral ensembles (Corn & Bailey, 1991). When examining the strategies used for learning music, it was noted by survey respondents that the most frequent approaches included rote music instruction, large-print music notation, and recorded music. A more recent investigation identified students' attitudes toward their musical development as they related to their past music experiences in public school, the use of music notation, modes of communication used during rehearsal, and music repertoire choice (Abramo & Pierce, 2013). Students studied by Abramo and Pierce (2013) identified the types and amount (or lack) of accommodations and modifications that greatly affected their attitudes toward music study. These findings were consistent with another investigation that suggests students with visual impairments can access and participate in an instrumental music ensemble curriculum with minimal, individualized accommodations and no curricular modifications in the first semester of instruction (Coleman, 2016).

Currently, students with visual impairments are the least represented disability group in the music education literature (Brown & Jellison, 2012). The purpose of the descriptive investigation presented here was to identify the types of music programs and instructional music strategies utilized by students in state schools. All three of the researchers of this article have past or present experience in teaching music to children with visual impairments, and two of them were music educators at state schools. By examining the music programs at state schools, the researchers sought to identify current trends and future areas of research for the field of visual impairment and for the field of music education.

Methods

Survey design

The researchers composed a 30-question survey utilizing an online survey tool (SurveyMonkey) consisting of both closed and open-ended questions for the following areas:

Professional information. This area was comprised of age, gender, level of education, professional certifications, the official classification of position, years of experience as a professional in the field, professional responsibilities, and the time of day their music services were provided.

Frequency of teaching strategies. Teachers were asked to rate the frequency that the following music teaching strategies were used: professional or student recordings, rote learning, singing or solfège (a system for singing notes), self-developed strategies, large print, use of a technological device, braille music notation, improvisation or compositions, and instrument adaptation.

The survey instrument was edited by three music professionals with experience in teaching music to children with visual impairments. Once completed, the researchers obtained institutional review board approval from West Texas A&M University.

Participants

In order to obtain participants for this survey, the researchers utilized a school listing maintained by the Council of Schools for the Blind website (Council of Schools for the Blind, n.d.). The top administrator indicated for each of the 44 state schools listed on the website was contacted by e-mail and was asked to provide the researchers with the e-mail address for the primary music professional working at the school. Thirty-seven state school administrators responded to these e-mails. Of the 37 music professionals identified, 29 survey respondents identified an additional 15 music professionals working at their facilities who could elect to take the survey.

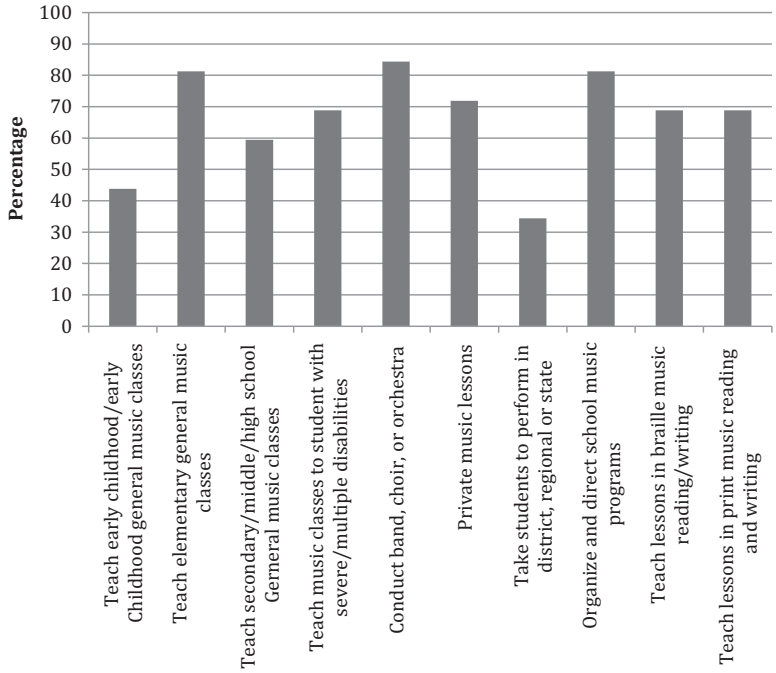

Figure 1. Percentage of SRSB music professionals job-related duties.

Procedure

An e-mail containing the survey invitation was sent to the 37 primary music professionals, and a reminder sent two weeks later. Twenty-nine of the 37 people contacted elected to take the survey. A subsequent e-mail invitation to participate and reminder message was sent to the additional 15 music professionals identified by the 29 respondents, making for a total solicitation of 52 music professionals working at state schools. Prior to their accessing the survey, we obtained informed consent from all respondents.

Results

Out of the 52 surveys sent, the total number of respondents who completed the survey was 32, representing a 62% response rate from 29 different state schools.

Types of music programs

To better understand the types of music education programs available to students with visual impairments at state schools, respondents were asked to indicate all of their music-related duties (see Figure 1). The most commonly reported music-related duty was conducting an ensemble (84%), followed by teaching elementary general music classes, and organizing and directing music programs (81% each). A large number of survey respondents (71%) reported that their music-related duties included teaching private lessons, teaching music classes to students with severe or multiple disabilities (69%), teaching lessons in braille music reading and writing (69%), and teaching lessons in print music reading and writing (69%).

Frequency of music-learning strategies

Music professionals were asked to rate how often they utilized various music-learning strategies (see Figure 2). The scale used consisted of five categories related to frequency: 1 = daily, 2 = often (two to three times per week), 3 = occasionally (two to three times per month), 4 = infrequently, and 5 = never. The researchers calculated the responses and

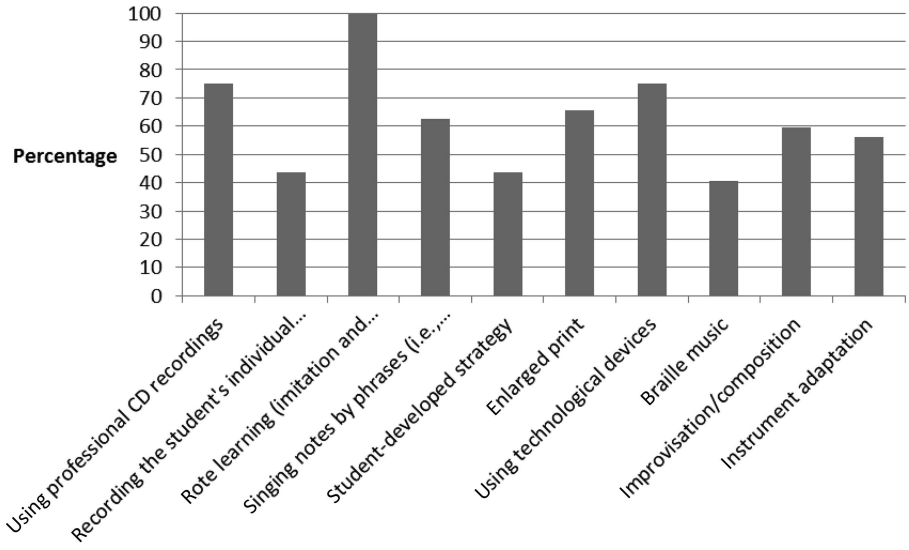

Figure 2. Frequency with which instructional strategies and materials are used. Percentages indicate the number of music professionals that use methods and materials on a daily basis or often (2 to 3 times a week).

obtained percentages for each frequency category across each of the instructional music-learning methods and materials. Then the percentages for the two categories representing the greatest frequency (daily and often) were combined. The combined percentages were ranked from highest to lowest to determine the ranking order for each instructional strategy used by these professionals. The following ranking order indicates the percentage of music educators who used the following strategies on a daily or two to three times per week to teach a music objective to students with visual impairments: rote learning (100%), using technological devices (75%), using professional recordings (75%), using enlarged music notation (66%), singing notes by phrases (63%), improvisation or composition (59%), instrument adaptation (56%), recording the students' individual parts (44%), student-developed strategies (44%), and using braille music notation (43%).

Discussion

This survey provides teachers of visually impaired students and music professionals in other educational settings with updated information regarding the types of music training and instructional music strategies received by these students at state schools. Although there are several limitations to this investigation, the results suggest two primary areas of interest. The first area relates to the similarity that exists between the music education at state schools and that available to students in public schools. The data suggests that the instructional strategies, variety, and amount of music education opportunities that students at state schools receive are similar to those received by students in public schools (Duke & Byo, 2011; Göktürk Cary, 2012; Jellison, 2015). Survey respondents stated that rote learning, improvisation, and solfège, combined with standard music education approaches such as Kodály, Orff, and instrumental music training, are frequently used to teach musical objectives to students.

The second area of interest is the specific modifications and accommodations that students with visual impairments require to access music education materials. The use of technological devices was ranked as one of

the most frequently used instructional methods (75%) by music professionals at state schools. A possible area of future research might concern the types of assistive technology used in the music classroom. High-tech devices like iPads have several music applications such as the ability to record audio files and enlarge the screen instantly. Other types of music technology, like the Limelighter music reader from Dancing Dots, allows students with low vision to read music in real time and have the music scroll on the screen using a wireless foot switch. However, and that was a limitation of this study, the definition of a *technological device* was very broad and could have included lower-tech items such as picture symbols, music stands, and others. Future research should examine all types of assistive technology that music professionals use with students with visual impairments during their music instruction.

A third area of interest is the use of braille music notation. Sixty-nine percent of the teachers used braille music notation in some capacity 43% of the time. These results were not consistent with previous research that suggested that large-print music is a more prominent literacy medium than is braille music notation (Corn & Bailey, 1991). Also, the frequency with which braille music notation was reportedly used could be the result of several factors, including the growing population of students with visual impairments and additional disabilities or the low percentage of people who read braille (American Foundation for the Blind, 2017). Secondly, braille music notation is not needed throughout the entire music-learning process. Students need braille to access a new piece of music, but once the music is memorized and is refined for performance, the braille is no longer needed. Current research also suggests that braille music notation paired with other music tools and strategies is more efficient for independent music learning than braille music notation alone (Park, 2015). Future research might examine how music instruction and braille music notation align with specific types of technology for independent music learning for students with visual impairments.

Conclusion

The research regarding music learning and students with visual impairments is limited and dated. The purpose of this investigation was to provide updated data that identified the types of music training and strategies for music learning for students with visual impairments at state schools. Although the overall population of students with visual impairments at these schools may have declined in certain areas of the country, the data suggests that there are no signs of limited musical opportunities for students at the 29 schools represented in the survey. All schools reported music classes for students with multiple impairments, general music classes, and some type of larger music ensemble (choir or band, for instance), or private music lessons. The instructional strategies used for music learning seemed similar to the approaches used with sighted students, although specific accommodations and assistive technology related to the sensory disability of visual impairment were provided on a regular basis to students. Future research needs to examine the types of assistive technology and how and when braille music notation is used throughout the process. Such investigation could assist the collaborative efforts between itinerant teachers of visually impaired students and music educators in public schools to provide the necessary accommodations for music students with visual impairments. The transition of music knowledge and skills outside the classroom is more than just an issue of the content of our teaching. At the heart of all music instruction, modified or otherwise, is the idea that music is a fundamental part of the human condition that allows a person to convey an idea to listeners, through meaningful participation, while experiencing joy (Duke, 2015). Accommodations

combined with effective music teaching provide students with daily musical experiences in which they can experience the satisfaction of musical achievement.

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