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“It’s Just the Way I Learn!”
Inclusion from the Perspective of a Student with Visual Impairment

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Abstract
This article describes the inclusive experience of a student with visual impairment in secondary band settings. Information obtained from students with visual impairments who have experienced active participation in school music ensembles may provide much-needed insight into instructional strategies that could improve inclusion. Many music educators believe they lack adequate resources and training in including students with visual impairments. Therefore, a deeper understanding of the experience of participating in secondary performing ensembles from the viewpoints of students can help guide the efforts of those involved in their music education.

Keywords: band, ensemble, exceptionality, inclusion, instructional strategies, visual impairment

In the United States, inclusion of students with disabilities and exceptionalities, including visual impairments, into regular schools and classrooms has become prevailing practice since the passage of the Education for All Handicapped Children Act in 1975 (and, most recently, the Individuals with Disabilities Education Improvement Act [IDEA] in 2004). Throughout education, this practice means a wider diversity of learners and a greater responsibility to meet the needs of our students. For music teachers, including all students regardless of abilities or disabilities requires developing more effective instructional techniques and devising alternative ways of teaching and assessing music. Although students...
with disabilities are placed more often in mainstream education classrooms—including secondary instrumental music ensembles—progress is still necessary for more meaningful and optimal educational opportunities in the least restrictive environment. While the learning needs of students with any type of physical or learning disability should be carefully considered in all classrooms, students with visual impairments in secondary music ensembles require specific and sometimes unique accommodations.

Educators may not frequently work with students who are blind or visually impaired. In fact, according to the National Center for Education Statistics, school-age children with visual impairments account for less than 1 percent of all students served under IDEA.⁠¹ About 0.6 percent of students under the age of eighteen, or about 448,000 children, are blind in one or both eyes or have difficulty seeing even with corrective lenses.² In addition, it is estimated that 219,000 students have a nonsevere visual impairment.³ However, despite the fact that visual impairments are lower-incidence disabilities, affected students require unique and specific accommodations for successful experiences in school. Therefore, teachers should become acquainted with characteristics associated with visual impairment as well as various instructional strategies available that could assist in student learning.

Although existing sources reveal that music educators seem to be interested in including students with visual impairments in secondary ensemble settings, there is a lack of accessible materials for use in the classroom and in rehearsals.⁴ In collegiate preparation, many music majors feel there is a lack of special education offerings.⁵ Practicing music educators have also reported receiving few training opportunities in teaching students with disabilities.⁶ Pertinent to this article, there are few prominent research findings that address the topic of inclusion in secondary ensembles from the perspective of the student with visual impairment.

Considering best practices for meeting the needs of students with visual impairments became critical for me when I met Chase.⁷ He was a bright, enthusiastic clarinet player who displayed a great passion and curiosity for music. Chase thrived in his musical experiences: he learned how to play the saxophone and eventually earned the top chair in his high school’s auditioned jazz band; successfully participated in marching band, where he learned field shows and parade marching; took private piano and drum set lessons; and sang in choir. I had the opportunity to work closely with Chase throughout his middle school and high school band experiences, helping with accommodations and teaching him individual lessons. Chase is now flourishing as a music education major at the collegiate level.

Working with Chase throughout his middle school and high school musical experiences taught me much about helping students with individual differences in my classroom. Chase’s perspective was captured through a series of personal interviews and observations of his musical experiences. Understanding the perceived rewards and challenges from the viewpoint of the student can help music educators provide the best opportunities for inclusion in music ensemble settings. This article illustrates the inclusive experience of a recent high school graduate with a visual impairment who fully participated in secondary band and choir, from the perspective of the student himself, by examining the process of
participation, necessary accommodations, support received from stakeholders, and recommendations for music educators.

The Participation Process

Chase considered himself a typical student. He attended classes, was involved in numerous school activities, liked spending time with friends, and looked forward to what would await him after graduation. The only thing that set Chase apart from other kids at his school was that he has been blind since birth. He did not, however, think of himself as being different from any of his classmates or as having any disadvantages. “I’m just a normal guy,” he said, “and I get by with the things I do have just like everyone else does. I don’t let [visual impairment] stop me from doing things that make me happy.” Chase was a member of several ensembles, including choir, concert band, marching and pep bands, and jazz band. He successfully auditioned for a seat in the All-State Band, was accepted into numerous honor bands, and was a member of his school’s Tri-M Music Honor Society.

The process of students with visual impairments becoming involved in band and participating in band–related activities seems similar to the experiences of typical students. There was never any doubt that Chase would join the band. He said, “It was almost an automatic decision when it was time to sign up. My parents also really wanted me to do more with music, which encouraged me. I also joined band because most of my friends joined band.”

Although Chase was not quite sure what he would be doing in band before he signed up, or what kind of accommodations would be needed, it was the lure of performing music that most inspired him. Having a visual impairment did not seem to be a deterrent for participation in band for either Chase or his band director. Not only was participation encouraged but also Chase could choose which instrument he wanted to play, the same way that all the other students did. Helping students with the instrument selection process and adapting instruments if necessary are critical components of success for students with individual differences. Chase began playing the clarinet in the school band and felt where to put his fingers. “Putting on the reed was the hardest part,” Chase said. “But once I figured out which part of the reed went on the flat part of the mouthpiece, it was easier.” In addition to using tactile strategies when performing on his instrument, Chase also relied on technological resources as well as the assistance of his teachers, parents, peers, and paraprofessionals.

Making Accommodations

Students with visual impairments must be taught compensatory skills such as accessing literacy through braille or adaptive print, developing handwriting, and improving auditory skills. Additional accommodations may include extended time, specialized instructions and materials, and environmental adaptations. Some forms of specialized equipment may include a braillewriter, dark or raised-line paper, a cane, an abacus, computer software, low-vision aids, and electronic equipment for auditory access to print material.
students with visual impairments, about 10 percent primarily access text materials via braille, and 25 percent use mostly large or regular print. Chase adjusted quickly to the mechanics of playing the instrument and creating the appropriate sound; however, the task of “reading” music was a bit more challenging. The faculty in Chase’s music department first explored the possibility of helping him read braille music. Some stress the importance of teaching students braille music early in their musical training. However, although Chase was an accomplished reader of braille in other circumstances, applying braille to music reading did not transfer as easily. According to Chase,

I can read braille when it’s regular words. But it doesn’t work as well for music, and it was confusing at first. For example, pitch and rhythms are combined into one symbol. Octave markings only precede a note when the octave changes, so there are usually no more than two braille cells per pitch. But if there is any articulation on the note, like a slur or a staccato, then there is another cell for that, too! So basically, to get all the information I need just to play one note, it can take several braille cells to get there! And that’s just one note!

To accommodate, Chase first learned music aurally, by listening to recordings of his part and then memorizing it. “I would have to memorize the music anyway,” he said, “even if I read braille music. You can’t read braille and play an instrument with both hands at the same time.” In fact, some research suggests that students with visual impairments “experience an irreducible relationship with memory” that may be their only pathway to participation in instrumental music. Although sighted music educators’ first thoughts may be to equip students with braille music, advances in digital equipment make solving the “immediate dilemma” of “how to help the student successfully play or sing with the rest of the class without delay” possible. It is also suggested that braille music alone is insufficient, requiring improvement in adaptability and availability, but can be useful when combined with other tools.

Chase’s band directors recorded themselves playing repertoire using the software program GarageBand and provided performance instructions specific to his instrument. Then, the recordings were transferred to iTunes, where Chase downloaded them. His teachers would also burn him CDs that Chase could use when learning his part. “This method has always worked all right until recently,” Chase explained:

When I entered high school and played in the top jazz band, my parts became more difficult, so my band directors couldn’t always play it that well on my instrument, or they didn’t have the time to record such hard parts. So the school hired a private instructor, a professional performer on my instrument, to record my parts for me. I guess they had to know what music I was going to play in advance, though, because I know it takes a long time to get the music to the private instructor and then back to me with enough time to learn it before class.
As a freshman in high school, Chase acquired the coveted first chair position in the top high school jazz band on saxophone. “I actually really like jazz band. And it’s great that I have the lead alto spot because that person gets all the improvised solos,” Chase said. “And no one else likes to improvise! They like to have the solos written out. But I think it’s fun to just listen to the background and make it up as I go along. I think maybe the other people could do it too, but maybe they just can’t hear it as well because they are looking at what’s written.”

Because Chase could not see the chord changes written in his part for the improvised solos, and the challenge of verbally speaking through all the chord changes was too time-consuming for teachers and difficult to follow, Chase’s band director made recordings of the rhythm section playing through the solo sections. Chase then took the recording home and practiced different improvised solos while listening to the rhythm section. “It helps to have something to listen to,” Chase said. “It’s really hard to practice improvising otherwise. It’s like trying to dance to no music—it just doesn’t make sense.” However, this accommodation proved equally valuable to the other students in jazz band also. Chase commented,

I was telling some of my friends about my recordings, and they thought, “Hey, that would be easier than practicing to no music!” So they asked my band director to make them recordings to listen to, too. Since we already had the recording saved on his computer, it was really easy for him to just make some more CDs to give to everyone else.

Different pieces of technology, software, and equipment (such as laptops, tablets, digital recorders, GarageBand, and iTunes) have been vital for Chase’s learning and success (see Table 1 for some suggested technological resources for students with visual impairments). Chase stated, “The main tool that helps me is listening to recordings of the music to figure out my part and how my part fits with the other parts played by other instruments. I use CDs and online recordings for this.” Technology provided by the school that Chase also used at home helped him learn the material more quickly and effectively, contributing to a sense of independence in learning music. Using appropriate modifications and accommodations is essential to the success of students with visual impairments. Discovering each student’s needs determines which accommodations or modifications are most beneficial. The most valuable resources in determining what works best for students with visual impairments are the students themselves—meeting the specific needs of individual students through communication with them is of indispensable worth.
### Table 1. Resources for Students with Visual Impairments in Ensembles

<table>
<thead>
<tr>
<th>Resource</th>
<th>Description</th>
<th>Features</th>
<th>Websites</th>
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</table>
| **Dancing Dots Braille Music Technology** | Products and training focused on developing and adapting music technology for the visually impaired | • GOODFEEL (braille music translator)  
• Lime Aloud (independently create print music scores)  
• The Lime Lighter (assists musicians with low vision) | • http://www.dancingdots.com  
• http://www.dancingdots.com/main/goodfeel.htm  
• http://www.dancingdots.com/prodesc/limealoud.htm  
• http://www.dancingdots.com/limelight/limelightmain.htm |
| **FreeDots** | Open-source, free alternative for translating music into braille | | https://delysid.org/freedots.html |
| **Digital audio recorders** | Storage devices with built-in microphones useful for recording and playing back audio material | • Zoom H4n or H2  
• Tascam DR07 or DR-100  
• Edirol R-09  
• Olympus LS-11  
• Sony PCD-D50  
| **Digital audio workstation and recording software** | Useful for recording and editing audio material and adding loops or accompaniments | • ProTools  
• GarageBand (free with Mac)  
• Linux Multimedia Studio (free)  
• Ardour (free) | • http://www.avid.com/en/protools  
• https://www.apple.com/mac/garageband/  
• https://lmms.io/  
• http://ardour.org/ |
<p>| <strong>forScore (music reader for iPad)</strong> | Useful for students with low vision; allows musicians to store and catalog scanned PDF versions of music that can be marked or annotated | ReFlow mode converts multiline music into a single line with side-scrolling notes; operable via a foot pedal. | <a href="https://forscore.co/">https://forscore.co/</a> |
| <strong>Music Zoom</strong> | App for the iPad specifically designed for musicians with low vision | Magnifies and scrolls through music using a footswitch; can invert colors and add text and highlights | <a href="http://musiczoomapp.com">http://musiczoomapp.com</a> |
| <strong>PlayScore or Sheet Music Scanner (Apple)</strong> | App that scans traditional sheet music using built-in camera and plays it back | | <a href="http://www.playscore.co/">http://www.playscore.co/</a> |
| <strong>HotPaw Talking Tuner</strong> | App for iPhone that speaks the played pitch and the number of cents flat or sharp | | Available in the iTunes App Store |</p>
<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>iReal Pro</td>
<td>App useful for sighted musicians as well as the visually impaired; accompaniess musicians with realistic-sounding band to aid in practicing</td>
<td><a href="https://irealpro.com/">https://irealpro.com/</a></td>
</tr>
<tr>
<td>Read the Music</td>
<td>Gadget that translates sheet music into sound for the visually impaired</td>
<td><a href="http://gizmochunk.com/2067/2012/09/22/read-the-music-translates-sheet-music-into-sound-for-visually-impaired">http://gizmochunk.com/2067/2012/09/22/read-the-music-translates-sheet-music-into-sound-for-visually-impaired</a></td>
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† No two students with visual impairments will have exactly the same needs or levels of vision, so it is essential that all accommodations and instruction be individualized for each student.

**Support from Stakeholders**

Along with learning about the students themselves, music instructors can also rely on the assistance of parents; special education staff, including paraprofessionals; and other trained professionals, such as braille music transcribers. Sometimes, opportunities for visually impaired students are missed because teachers do not know how to support their students’ musical interests. Discussion of music instruction or activities is often not included in meetings with educational or rehabilitation teams, so it is important that music educators make an effort to be a part of such meetings. The availability and type of family support are factors that affect the type of adaptations necessary for students. Chase stated, “My parents have encouraged me since I began band to practice and do my best.”

Chase participated in his high school’s marching band, which performed field shows at football games as well as parades, with the help of a paraprofessional who guided him where he needed to be. According to Chase,

She just walks beside me. I don’t think she actually “marches,” because people are always saying she’s out of step, but that doesn’t matter; the judges aren’t watching her. She stands just behind my shoulder and holds on to my elbow, so based on which way she’s guiding my elbow, I know which way we’re going. And marching in step isn’t difficult for me at all: I just listen to the bass drums and then I know where the beat is.

One of the most important things music educators can do for students with visual impairments, Chase said, is provide them with extra time to learn the music. Receiving the repertoire for class before the rest of his peers compensated in some degree for not seeing the written parts. He explained,
When the class is working on sight-reading, or if my band director just forgets to get me my music in time, I usually just have to sit there and listen. I can’t play; there’s nothing I can do. So sometimes I feel like I’m behind, and there’s more pressure to learn the music quickly to catch up.32

It is estimated that visual cues account for up to 80 percent of the learning that takes place for sighted children.33 While sighted students can glance at a piece of music for the first time and begin playing at least some of the part right away, Chase cannot sight-read braille music and play his instrument with both hands at the same time. When learning music by ear is necessary, participation in activities such as sight-reading becomes much more difficult. Music educators can provide support to students with visual impairments by providing them with extra time to access the music prior to distributing it in class. Students will have an easier time performing with the ensemble when they are given adequate time to prepare their individual parts.34

In addition to cooperating with the students, parents, faculty, and other professionals, music educators can also turn to outside resources for assistance, such as braille-transcribing technology and organizations in support of those who are visually impaired. For example, the National Library Service for the Blind and Physically Handicapped has a collection of more than 25,000 audio, braille, and large-print music scores, textbooks, and other instructional materials ranging in levels from beginning to advanced, available for students to borrow. Most of the braille music titles include works for piano, voice, choral works, and a few of the most well-known orchestral symphonies. While the material for concert band does not seem as abundant, the library does contain a collection of method books, such as the Standard of Excellence, as well as some popular music selections (see https://www.loc.gov/nls).35 In addition, there is a free online course that teachers can take to learn the basics of braille notation (http://www.brl.org/index.html), as well as a site that enables teachers to download free software that translates standard notation into braille (http://delysid.org/freedots.html).36

**Recommendations for Music Educators**

_Providing Individualized Instruction to Students with Visual Impairments Can Help Ensure Their Lifelong Success_

Students with visual impairments have educational needs in three primary areas: the need for experiential learning or developing a system for organizing the environment, the development of alternative skills by receiving modifications and accommodations, and learning to access information that is acquired casually and incidentally by sighted learners.37 For students with visual impairments in a musical setting, educators should provide the tools and skills necessary for independence, self-assurance, and success in their musical participation.38 While independence may be achieved by reading braille early on in musical training,39 braille music might not be the best fit for all students. In Chase’s case, for instance, he felt a greater sense of independence in learning music aurally when using technological applications such as GarageBand.
No Two Students with a Visual Impairment Will Have Exactly the Same Needs or Levels of Vision, So It Is Essential That All Accommodations and Instruction Be Individualized for Each Student

Although students with visual impairments may require accommodations or modifications, it is equally important for the teacher to encourage students to be as independent as possible to avoid potential learned helplessness. A diverse number of factors should be considered for students with visual impairments, and the students’ needs may change or develop throughout time.

Involvement in Musical Activities and Course Work Can Provide All Students, Regardless of Their Abilities or Inabilities, with Enriching and Fulfilling Opportunities

Music activities give students chances to experience music as an art form and be creative and expressive. Also, students can benefit from interacting with peers, belonging to a team, and serving in leadership roles. Although music instruction for students who are visually impaired is sometimes not considered essential in the current educational environment because of the emphasis placed on core academics in the student’s schedule, many students with visual impairments enjoy successful participation in musical organizations and often discover their niche in school through music.

Music May Be a Very Fitting Subject in Which Students with Visual Impairments Can Excel

In fact, some research reveals that “individuals born without sight are more accurate in their pitch perception and spatial placement of sound sources than are those with vision,” concluding that “in some ways, disabilities do not ‘disable’ people but, instead, empower them to be ‘extra able’ in music.” Those who are visually impaired may often have an affinity for music; however, it is important to avoid the potentially harmful stereotype that students who are blind are automatically musically gifted. This preconceived notion may lead to apprehension for educators when including students who are blind in music instruction. Furthermore, success in music may not occur because of the natural abilities of students with visual impairments but because of students’ dedication to learning, encouragement received, and availability of resources.

Music Educators Must Be Willing to Make Accommodations or Modifications So That Visually Impaired Students Have the Same Opportunities As Their Sighted Peers Do

An accommodation can be defined as an opportunity for students to complete the same activities or assignments as other students, but with a change in assessment procedures such as test formatting, test setting, amount of time needed, or type of response required. For instance, a student with visual impairment may need the music enlarged, reduced in size, or translated into braille when performing the same music as typical sighted students. Alternatively, an instructor may use a modification when students cannot complete the same activities because of the disability, and therefore changes the standard of the participation or the extent of what the activity measures. Music teachers can determine how the student can best participate by making all necessary accommodations possible, carefully reviewing the student’s Individualized Education Program (IEP) and
behavior management plans, eliciting the assistance of special education staff, and making curricular adaptations.49

**When Students Have Difficulty Learning Visually, Music Educators Can Present Material Aurally and Kinesthetically As Well**

For example, when demonstrating the concept of a musical staff to students who are visually impaired, instructors may use a raised-texture board, such as a felt board, with 1- to 2-inch-thick heavy rope representing musical notation.50 Music instructors may teach a piece of music by rote to the entire class—for students with visual impairments as well as those with typical sight. By doing so, all students may experience learning aurally and “appreciate the unique strengths of musicians with visual impairments.”51

**Music Education Can Help Contribute to the Personal Growth of Students with Visual Impairments**

This may be accomplished by providing students with opportunities to learn “discipline, responsibility, goal-setting, the sense of accomplishment upon reaching a goal, and the self-confidence required for performance.”52 In addition, students benefit academically from music instruction that is provided in small-group or individual settings. Music also has many connections with other academic subjects that benefit all students, including those with visual impairments. Furthermore, and perhaps most important, performing in a musical group can provide “a sense of belonging and may contribute to that student’s acceptance and respect by his or her sighted peers.”53

**A Successful Experience**

While Chase learned music differently than other students did, the accommodations his teachers made specifically for him were also useful to all students, particularly in jazz band. Sometimes, Chase waited a bit longer to receive his music, but overall, he enjoyed being a member of the high school band and experienced extreme gratification in the success he had. Chase stated, “I feel pride in the things I can do and accomplish in band. I don’t guess I’ve ever really thought of things being obstacles. It’s just the way I learn—it’s part of who I am!”54

Since the type and degree of visual impairment affect every student differently, educators should consider each student on a case-by-case basis. The successful inclusion of students involves willing teachers and the assistance of parents, students, music and special education faculty, and even music therapists.55 Providing students with visual impairments a high-quality education in music can bring many benefits, enjoyment, and enriching experiences that create lifelong positive effects for all students—both those who are visually impaired and their peers.
Notes

* Chase is now a legal adult and has provided his consent for his identity to be revealed. Direct quotes are obtained from personal correspondence conducted when Chase was an upperclassman in high school.

** The Braille Authority of North America’s (BANA) position statement on the capitalization of the word braille suggests using a lowercase letter when referring to the code: http://www.brailleauthority.org/capitalization/capitalization.pdf.


7. Chase (student with visual impairment), discussion with author, March 2015.

8. Chase, discussion with author.


10. Chase, discussion with author.


15. Ibid.


20. Ibid.
21. Ibid.
22. Ibid.
23. Ibid.
30. Chase, discussion with author.
31. Ibid.
32. Ibid.
34. Moss, “Quality of Experience.”
41. Riley, “Educating Blind and Visually Impaired Students.”
42. Erin, “Musically Speaking.”
43. Abramo, “Disability in the Classroom.”
44. Erin, “Musically Speaking.”
48. Darrow, “Including Students with Disabilities.”

51. Abramo, “Disability in the Classroom.”


53. Bartley and McDonald, “Music Education.”

54. Chase, discussion with author.