Enriching the Ensemble Experience for Students with Visual Impairments

By Wayne Roy Siligo

While on a short vacation during holiday break, I had an interesting conversation with a music educator from the east coast. He teaches in a middle school program and has recently enrolled two new students; one has no usable vision, and another reads only very large print but does not read music. He asked me how he could teach these kids and work them into his program. Music teachers across the nation face this dilemma every day. The challenge of teaching students with visual impairments in a sighted program has always existed, and with the increasing success of medical technologies for saving premature infants, it is likely to increase.¹

This article will give music educators some practical tools and information for helping students with visual impairments enjoy the ensemble experience. I have used these tools as music director at the California School for the Blind (CSB) and as a musician who is visually impaired. All observations and techniques mentioned here come out of my own teaching experience and the successful use of the same techniques by teachers I have shared them with in local California school districts. You can use many of these techniques and tools in

With the right tools, you can help students with serious visual impairments become valuable members of your ensemble.
your own classroom and share them with resource specialists working with music students who are blind or visually impaired. With the use of assistive technologies and the support of trained resource specialists in your school districts, teaching students with severe visual impairments need not be an insurmountable challenge. The lack of easy access to music and materials must never force you to exclude a student with disabilities from music class. The Americans with Disabilities Act and Individuals with Disabilities Education Act prohibit such exclusions.

Teaching students with severe visual impairments need not be an insurmountable challenge.

Some experienced sighted music educators who have never taught a student who is blind might naturally think their first responsibility is to supply Braille music transcriptions of the music used in class. With new advances in digital equipment, this is easier than in the past. But many public school music students with visual impairments will not be able to read Braille music when they join your program. It has been my experience that most students who do read it have either taken private instruction or attended a school for the blind.

Though it’s quite possible that the new student will learn Braille music in the future, this possibility does not answer the teacher’s immediate dilemma: how to help the student successfully play or sing with rest of the class without delay. One fact worth remembering is that when Louis Braille first perfected tactile Braille music nearly two centuries ago there was no other way for the blind to write or preserve musical sound. Modern technology and recording techniques have opened new avenues that were unavailable in Louis Braille’s day. Since you must teach your students using whatever media are accessible, consider the following adapted techniques as ways to get immediate results for students who are visually impaired.

Assessing Skills
Your first step is to evaluate the student’s skills, and quality one-on-one assessment is invaluable. This will help you determine what adaptations are likely to be most beneficial. For students with usable vision, teaching them to read standard music notation is generally the best route. The notation will need to be enlarged when copied, and the size of the magnification needed should be available from the student’s resource or classroom teacher. Some students with vision loss prefer reverse polarity background display (black background with white notation).

Students who are blind and do not read Braille music can often memorize their music by listening to recordings. Having a student repeat some simple hand-clapped rhythms and a few five-note melodies either vocally or on an instrument will quickly give you some idea of the student’s melodic and sequence memory skills. Students with hearing loss and those who have difficulty repeating back melodies and rhythms may be able to learn their music using literary Braille, which I will discuss in more detail below.

If you have a print-oriented program, you must find other means for students who are visually impaired to have access to materials. Other than the Braille music code, there is no simple, quick-fix, or inexpensive way to convert visual print music into an auditory or tactile form for the musician who is blind. To my knowledge, the only vehicle being developed other than aural recording of played music and optical character recognition (OCR, scanning print and transcribing it electronically into Braille) is the Talking Music program from the Netherlands, described at http://projects.fub.nl/. This program, which audibly identifies and describes print music notation, is still in development, but it shows promise as an alternate access tool to Braille music. Without sophisticated equipment, however, these avenues are not of immediate use to the classroom music teacher working primarily with sighted students. But there are ways teachers can use commonly available technologies to help student musicians who are blind.

Recording the Music
One technique that works well with both vocal and instrumental pieces is to record the student’s parts on cassette tape in concert pitch from the print music or score, then record the entire piece being rehearsed either during live rehearsal or from any demo CD, MP3 file, or tape. The student who is visually impaired must hear the entire sound of his or her section and how his or her part meshes with the rest of the ensemble.

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Begin by recording the student’s part slowly while saying the print-music note names, then record the student’s part in real time. Conclude the recording with a real-time presentation of the complete ensemble. Hearing the correct names of pitches verbally (e.g., C an eighth, F an eighth, G a quarter, A a half, bar
line, quarter rest) prepares the student for using these same terms when learning Braille music. You can make the recording yourself using a high-quality analog tape recorder or assign the project for extra credit to an advanced keyboard or other instrumental student.

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_Mentoring_

Another very useful solution offers both social and musical rewards. Experienced players in the school program can spend supervised time with the student who is visually impaired. The more experienced mentor can play the student’s parts, teaching the phrases one at a time. After the student has memorized the part, the sighted mentor can play a harmony part while the musician without sight plays the newly learned part. This process is enjoyable, and the sound is satisfying for both players. Like the recording of musical material, this process is for immediate aid to the nonreading student, not a replacement for future independent access.

_Literary Braille_

_Students with vision issues can write out their melodic lines and chord progressions in literary Braille._ Literary Braille is often an easier first step than Braille music because it does not require students to learn any additional Braille codes; they simply use the Braille alphabet that they already know. Using portable Perkins Braille writers, students can use the print-music letter names and the abbreviation fi. for flat, sh. for sharp, and nat. for natural.

Many middle and high school students with visual impairments now use small portable Braille computers, or note takers (such as BrailleLite and BrailleNote), made available to them through departments of rehabilitation or their school districts. These units have refreshable mechanical Braille dots that students can read tactiley and a Braille keyboard to enter data. With these units, students can enter music notation into their computers using literary Braille. The advantage these units have over the traditional Perkins Brailleers is that students learning Braille music can also use the Braille music code. Either way, this process gives students a hard copy of the music. Students who aren’t using Braille music will still need to learn the meter and rhythm patterns from tapes or CDs.

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_Transposed Pitch_

This next point is often one of the most confusing situations for the student who is visually impaired. Band and orchestra teachers must be aware that many music students with vision impairments learn their instruments in concert pitch, not in transposed pitch. We know that print music is written so that the

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Creating Braille Music

Software

Because the following programs can be rather expensive, they may be more fitting for a resource center or larger music department. However, music teachers should be aware of their availability.

- Duxbury allows the non-Braille-reading teacher to convert standard print documents into literary Braille. Braille users can utilize the six-key entry feature of this program to write literary Braille or Braille music. Dozens of copies can be embossed from the computer file created.
- Sharp Eye is an optical character recognition (OCR) program that scans print music and translates it into Braille music. It can be used in conjunction with Goodfeel (a Braille translation program) and Lime (a music editing program).
- Toccata, an Australian product, is another OCR program for transcribing print music to Braille music.

Music printed using an OCR program may need to be tweaked by a sighted user. These programs require a scanner, a good-quality computer, and a Braille embosser-printer. This equipment is often available in resource areas in the school or at some public libraries.

Transcribers

These transcription services listed below will take your print music and transcribe it into Braille music for a fee by the page. Some services with digital files will send previously transcribed pieces and even books by disk or e-mail. The music can then be printed on your local Braille embosser.

- Dancing Dots, http://www.dancingdots.com (will also transcribe MIDI files)

instrument will play in the correct tonality, fitting in with others in the ensemble. This practice is often confusing to a student with visual impairments who has learned in concert pitch. For example, on alto sax, the student is told the note is a D, which it is in the print music, but the student hears an F when blowing the horn. When teaching students who have learned in concert pitch, teach them to transpose from concert pitch to print pitch. In most cases, they will adapt to the transposed notation in a relatively short time.

Quite often, public school music teachers will find that newly enrolled students with visual impairments can already play some pieces on piano, guitar, or another instrument with great proficiency. But these students may not be able to describe what they are playing using correct musical terms (e.g., specific chord names, inversions, voicings), and they often do not understand the concept of sharps, flats, and accidentals. This is not uncommon for students who have learned by ear or have perfect pitch. They have had no need to know the terminology as long as they could play the right sounds. These students are usually quick to pick up the vocabulary and often, because of their aural skills, become fine additions to the band or ensemble. Improvisation and composition can advance rapidly for these gifted players. Three members of our present award-winning seven-piece jazz ensemble improvise in all twelve keys.4

Braille Music

Braille music is a completely different code from literary Braille. When students begin learning Braille music, they quickly learn to switch codes from literary to music. (Louis Braille, who developed both codes, was an organist.)

Though Braille music can duplicate every symbol on a printed piece of sheet music, the material is normally not used as a sight-reading tool. Teachers working with students who are blind must remember that Braille music is a means to memorize the music, sometimes one measure or short phrase at a time. It is not used in the same way as visual information. However, I have known a few fine musicians with no vision who could read Braille music melodic lines in tempo.

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The greatest obstacles to teaching the Braille music code are lack of exposure to it and the difficulty of assimilating its abstract concepts (e.g., there is no staff in Braille music). Despite these challenges, students soon find that it is simple to learn the actual Braille cells for the seven notes, along with the accompanying accidentals and the seven octave signs. Sighted teachers can learn to read the Braille dots visually. Most of the teachers and assistants at CSB read Braille in this manner.

Once students have learned to read the Braille music cells, they must learn the real-time sound of rhythms they have read in Braille. What value is there in being able to read a quarter-note triplet followed by a dotted quarter and an eighth
Some individual attention is a must.

Students with visual impairments who have learned to read Braille music will need music that has been transcribed into Braille. The Creating Braille Music sidebar provides an overview of software and transcription services that can help you. The Sources for Braille Music Materials sidebar lists places where you can acquire software, music, and instructional materials to assist the musician without sight.

It’s important for us to remember, however, whether we are comfortable with the fact or not, that despite our efforts, some students who are visually impaired may never learn to read music. But in spite of being nonliterate, with aural help, they can still become excellent performing musicians.

Teaching Braille Music

If you would like your student musicians without sight to learn Braille music and don’t have access to a Braille music teacher, you can still introduce the elementary Braille music code using the double-media texts listed in the Braille Music Texts sidebar. On request, I can also provide lessons I have written to help students learn specific skills.

Often, the resource teacher or itinerant visually impaired specialist at the school or district level can help you find and introduce Braille music materials to students. Together, you can share in the process and expose students to reading music. Combining beginning Braille music with other literary and auditory learning techniques will give a student who is blind time to learn these skills while participating in the music ensemble with sighted peers. Anyone with a music background can, with print and Braille texts, informally begin teaching the Braille music code. Though certification is required to be a Braille transcriber in both literary and music codes, it is not needed for a credentialed classroom teacher to begin teaching it.

It’s important to remember that whatever help you can give will be welcomed by the student who is visually impaired. One mentor can make a difference to that student’s future success. As a music teacher, you are part of the movement to make music available to all students, and students with visual impairments are no exception. With the right tools and help from a qualified music teacher, these students can join in with their sighted peers to

Sources for Braille Music Materials

- Dancing Dots (http://www.dancingdots.com) offers transcription software, resources for learning Braille music, and assistive technologies such as embossing printers and Braille note takers.
- Music Education Network for the Visually Impaired (MENVI) is a group of educators and advocates for the visually impaired who are involved in music. The MENVI Web site (http://www.superior-software.com/menvi) can help you find assistance in your own state or school district.
- The National Library Service for the Blind and Physically Handicapped at the Library of Congress (http://www.loc.gov/lsis) offers Braille music and other resources free to qualified individuals.
- Opus Technologies (http://www.opustec.com) offers music transcription software, resources for learning Braille music, and a selection of sheet music in Braille.

Braille Music Texts

- How to Read Braille Music: An Introduction by Bettye Krolick (San Diego: Opus Technologies, 1998) is a straightforward text for beginners. Print and Braille editions and a comprehensive CD ROM are available.
- An Introduction to Music for the Blind Student by Richard Taesch (Valley Forge, PA: Dancing Dots, 2001) is a comprehensive course in three print volumes and four Braille volumes.
- The Primer of Braille Music by Edward Jenkins (Louisville, KY: American Printing House for the Blind, 1960 with 1971 addendum) is a venerable text with exercises after each lesson.
become skilled and enthusiastic musicians.

Notes

1. Concerning the increasing numbers of premature infants who are surviving, Ann Parker, professor of pediatrics at the University of California School of Medicine, has stated that up to 11 percent of infants with extremely low birth weights (two pounds premature) could have severe ROP (retinopathy of prematurity), with accompanying retinal detachment and blindness. William Benitz, professor of pediatrics at Stanford University Medical Center, has said, “Very low birth weight (less than three pounds) premature births have increased to eighty-five thousand annually.” Ann Parker and William Benitz, “Premature and Very Small Infants: Consequences for Learning” (presentation for faculty at California School for the Blind, Fremont, CA, March 17, 2000).

2. Only approximately 20 percent of my newly enrolled students have had a working knowledge of Braille music. Since students with vision impairments are now often mainstreamed into their home districts, many do not receive Braille music instruction. For obvious educational reasons, literary Braille and the Nemeth Braille math code (the Braille code used for mathematics) receive the most emphasis.

3. Other teachers and I at California School for the Blind (CSB) are aware of this phenomenon. At the time of writing this article, nearly every child at CSB born with retinopathy of prematurity (ROP) has perfect pitch.

4. I once gave a teenage tenor and pianist in my program a CD of a choral work, “Missa Criola” by Ramírez. We were to perform it in a few months, and I wanted him to become familiar with the work. Though not a Braille user, over the weekend he memorized the entire first three rhythmically complex sections, playing all the parts on the piano and singing the lead solos perfectly in Spanish.

5. I’ve met many fine musicians with vision impairments who do and do not use Braille music. Over thirty years, it’s been my observation that a large number of non-Braille users are in the pop and jazz fields. Jose Feliciano, for example, told me he does not use Braille music. It appears that a higher ratio of classical musicians, perhaps because of formal training, do use the code.

MENC Resources

MENC has published the following resources related to visual impairments and other physical disabilities. To order materials, you may visit http://www.menc.org or call 800-828-0229. Articles from back issues of MENC journals are available in many library periodical databases.

- Spotlight on Making Music with Special Learners. Reston, VA: MENC, 2004. (Includes an article by Wayne Siligo on teaching music to students with visual impairments.) Item #1697.

- You can learn more about Louis Braille and view the Braille music code by visiting http://www.menc.org/contest/composers/louisbraille.html

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