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Children with Disabilities Playing Musical Instruments

By Kimberly McCord and Margaret Fitzgerald

Each fall, the music teacher held a meeting for fourth-grade students who wanted to learn to play an instrument and their parents. She explained what instrumental music involved: how to obtain an instrument, which books would be required, how the ensembles were scheduled, expectations for participation in concerts, and so on.

One year, Stephanie and her grandmother came to the meeting. Stephanie had always wanted to play the violin.¹ She was a shy, quiet girl with fairly good grades. She lagged behind in reading but managed to get by with her grandmother's help. After hearing the music teacher's presentation, her grandmother agreed to rent a student violin and listen to Stephanie practice at home.

On the first day of string class, Stephanie easily learned to hold the violin and bow. Her posture was good, and she was rewarded with a rich tone as she played her first open-string exercise. She was the first student to pick up her instrument after school. Stephanie was obviously very excited about playing her violin, and during the first weeks of class, she continued doing wonderfully. She even helped a friend with her bow grip.

The musical exercises became more difficult. The students mastered the open strings and were able to relate the pitches to written notation. The music teacher started teaching the students to finger notes and recognize the corresponding written notes.

Weeks went by. Stephanie faithfully practiced each night with her grandmother, but she couldn't seem to improve. The music teacher noticed that Stephanie was making mistakes in class. She called her grandmother, who agreed that Stephanie was struggling. The music teacher suggested that her grandmother could drill Stephanie on the notes. Stephanie was able to identify notes, but it didn't help her playing.

Stephanie, her grandmother, and her music teacher were all becoming frustrated. In desperation, the teacher shared Stephanie's struggles with a special educator in the school. The special educator looked at Stephanie's file and discovered that she had a mild reading disability. Stephanie had difficulty reading a line of text from left to right without mixing up words that were in the line above or below the line she intended to read. In order to overcome this problem, Stephanie's grandmother made her a card with a window cut out. Stephanie would hold the card over her reading material so that she would not be confused by the lines above or below. Unfortunately, no one had shared this information with the music teacher.

The music teacher was still at a loss. Using a card to read music wouldn't work since Stephanie couldn't hold the card and play the violin at the same time. The special education teacher suggested highlighting each space in the staff with a different color. With a little practice, Stephanie was able to correctly identify the notes and translate the notation into action while playing. Her grandmother highlighted all of her music for her, and eventually she caught up with the rest of the class. Stephanie was once again excited about playing the violin.

Starting Off Right

Stephanie's experience would have been easier for everyone if the music teacher had known about her disability when she signed up for music. This would have allowed her to make a plan to help Stephanie right from the start. To prevent these kinds of

With the right adaptations and help from their teachers and parents, students with disabilities can play musical instruments.

problems, we recommend sharing the list of students wanting to play an instrument with the special educators to find out if there are students who are receiving special education services, what their strengths and limitations are, and how you can help them succeed in music.

Communication and planning can begin as early as the recruitment process, where even instrument selection can play a role in students' future success. The Recommendations and Cautions for Specific Instruments sidebar includes suggestions of what instruments might be most appropriate for students with certain disabilities and how instruments can be adapted for certain students. Additional help is available in Barbara Elliott's *Guide to the Selection of Musical Instruments with Respect to Physical Ability and Disability*.²

Disabilities and Music

Some disabilities, like Stephanie's, will not be apparent to teachers during the recruitment stage or even early lessons. *Learning disabilities*—usually described as difficulty reading, writing, or doing math—are sometimes among the least obvious. Students with what the Individuals with Disabilities Education Act (IDEA) calls *specific learning disabilities*³ have difficulty processing information coming in or out of the brain.



Photo courtesy of Margaret Fitzgerald

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Students who are hard of hearing can learn to play violin by feeling vibrations in their jawbones.

Recommendations and Cautions for Specific Instruments

The following are general strategies for teaching beginners on band and string instruments that we have discovered in our forty-five combined years of experience teaching beginners. Many strategies were suggested by colleagues and special education teachers over the years; we will list names and schools for those who contributed additional tips.

Strings

- Strings are a good choice for children with cystic fibrosis and other physical disabilities that affect breathing.
- Viola or violin can be a good choice for students who are deaf or hard of hearing because they can feel vibrations from the instrument to the jawbone, as string teacher Margot Ehrlich (Metcalf School and University High School, Normal, Illinois) has found.
- Bass is a good choice for children with ADHD or ADD. Because the player is standing up, the student is free to move more and can focus a little more easily. (Of course, students need to know they can't get too wild with the instrument.)
- Cello and bass may be a better choice than violin or viola for students with gross motor disabilities because there is more room to maneuver uncoordinated fingers.
- Violins that are strung in reverse can help students with some physical disabilities. String teacher Margot Ehrlich had success with a child on violin who had the strings strung in reverse and held the bow in the left hand due to some missing parts of fingers. Some additional adjustments were made to sound post and soundboard.
- A homemade bow guide for bass that provides a channel for the bow to travel in can help students with poor wrist control. String music education and bass professor Bill Koehler (Illinois State University, Normal) made a bow guide out of a wire clothes hanger and mounted it at the end of the fingerboard with one screw.
- Tape on the fingerboard can help students find the intune fingerings. Tape on the bow will help will help them to use tip, middle, and frog of the bow.

Woodwinds

- Clarinet and saxophone players who are deaf or hard of hearing benefit from feeling vibrations through teeth on top of the mouthpiece.
- Bass clarinet and saxophone are good for students with certain physical disabilities because the neck strap and bass clarinet pin help support the instrument.
- Saxophone is a popular choice for many students with ADHD, and they do well if you let them stand up as much as possible.
- Woodwinds may be difficult for students with fine motor control problems.
- Articulation on woodwinds may be difficult for children with speech problems that cause them to have trouble coordinating the tongue.

Brass

- Brass instruments are a good choice for students with cognitive impairments because players don't have to use as many fingers as when playing other wind instruments.
- Brass instruments are a good choice for students with missing fingers, as long as three fingers on one hand are fully functioning.
- Brass instruments can help students with asthma increase their lung capacity. It's important that students clean the lead pipes because the accumulation of dirt can affect students with the allergy type of asthma. Students with exercise-induced asthma should check with their doctor for recommendations.
- French horn works well for some students with physical disabilities because they can partially support the instrument on one leg.
- Trombone is easier than other instruments for students with gross motor disabilities because they can coordinate the slide on a trombone more easily than valves, and only two working fingers are required. A student with a working prosthetic arm that bends at the elbow can also play trombone.
- A tuba with a stand that holds the instrument can work for some students with physical disabilities.
- A sousaphone with sousaphone chair holder can help students with ADHD or emotional and behavioral disabilities that make it difficult for them to focus and remain in one place for an extended period of time. Band director Beth Nuss (Paxton, Illinois) said, "The child was completely engulfed by the instrument and it kept him from getting out of his seat constantly." Managing large instruments makes it harder for easily distracted students to get up and move around and leaves them with no "extra hands" to bother their classmates.
- Brass instruments pose challenges for children with auditory learning disabilities or deaf and hard-of-hearing disabilities because they cannot hear the right overtones. Elementary band teacher Donna Humphreys (Metcalf School, Normal, Illinois) has helped these students by teaching them to recognize what the embouchure feels like for various overtones.

Percussion

- The percussion section includes possibilities for students with cystic fibrosis, nasal irregularities, or severe asthma. Band director Beth Nuss says she can always find something for even the most limited child; a triangle, suspended cymbal, or gong helps the student feel like part of the band.
- Percussion instruments (especially mallets) can be less frustrating for some beginners than other instruments, because the tone is acceptable right away.
- Mallet instruments allow students with ADHD/ADD some freedom to stand and move.
- Bass drum works great for students with hearing

impairments. They can feel the vibrations by standing on a wooden floor with shoes removed or playing with their left hand on the drum head. They can also lean against the drum and feel vibrations while watching the director to stay with time. It's important to have students who are deaf or hard of hearing watch the director more than the music.

- Snare drums can be played with one stick while the other hand is used to feel vibrations on the instrument. Students using this technique won't be playing rolls and flams, but they can play slower-moving rhythms. As they become more sensitive players,

they can learn to control the drum by the pressure of stick.

- Mallet percussion instruments can be challenging for students with gross motor disabilities. Shifting back and forth from diatonic and chromatic bars and playing all bars in the center can easily cause frustration.
- Mallets can be difficult for students with visual tracking problems because they need to see the music and look for the correct bar to strike. It's hard for them to read, then look, then hit, then read, and so on.
- Drums are difficult for students with processing delays to play in good time.

Learning disabilities vary in type and severity. In most cases, one mode of learning (visual, aural, or kinesthetic/tactile) is dysfunctional. If students can find a way to bypass the dysfunctional mode, they can often experience success by using a functioning mode. Often, the term *multisensory learning approach* is listed in the child's Individualized Education Program (IEP).

Students with a learning disability that affects math learning (dyscalculia) are likely to struggle with reading music. Music is similar to math in that symbols must be translated into something else. Translating these abstract symbols into meaningful information is difficult for students with dyscalculia. Students with reading disabilities (dyslexia) will also sometimes experience problems reading music.⁴ Some dyslexic students, like Stephanie, will not be able to discern where notes appear on a staff. Others might not be able to read fast enough to keep up.

The special educator in charge of each student with a specific learning disability can provide details about how the disability affects learning and what types of accommodations have been successful. It can help to describe to special educators the skills involved in learning to play an instrument, including reading music. Once they understand what is involved in playing an instrument, they can more effectively provide strategies that will reduce frustration for you and the student.

Of course, learning disabilities are not the only ones that can affect students' ability to read, write, or play music. Teachers working with

special learners may encounter a virtual alphabet soup of initials and terms to describe special learners. Visit www.cec.sped.org/law_res/doc/law/regulations/glossaryIndex.php for a list of definitions from IDEA that can help you understand some of the terms you are likely to see. The remainder of this article will offer strategies for helping students with a variety of disabilities succeed in music class.

Strategies for Music Reading

When students read music, they must quickly process several different concepts about each note. A B-flat half note has a specific pitch, fingering, and duration. Interpreting this information is a fairly complex skill, and many students with learning disabilities will not be able to learn to do this quickly.

We have all seen students write the names of the notes under the notes in their beginning method books. These students have figured out how to reduce the amount of information they need to process. If they eliminate naming the note, they can focus better on only two things—fingerings and duration. Most music teachers have been told that this is a bad habit, but students who are allowed to make such adaptations will experience less frustration and are more likely to stick with instrumental music. Gradually, as they get used to fingerings and duration, they might be able to process pitch better and stop labeling note names.

Students with more severe learning, cognitive, or physical disabilities may not read music at all but instead memorize the music. Some

will use the written notation as a guide but mostly play from memory. For example, students might recognize fast notes or high notes but not be able to count out or name the notes. These students are self-adapting and using their ears to learn the music. They may need recordings of their parts to memorize and learn from. They also might need to sit next to someone who reads music well and can occasionally show where they are in the music. Some children who struggle with reading music often learn to watch their neighbors' hands and fingers and press down the same valves or keys.

Students with specific learning disabilities might have short- or long-term memory problems that make it difficult to remember all of the important parts of reading music. For example, students with short-term memory problems may look at the key signature when beginning a piece but then forget what the key signature was. Students with long-term memory problems may have trouble remembering fingerings taught in previous lessons. Having a fingering chart on the music stand helps them to find the fingerings they have trouble remembering.

See the Tips for Music Reading sidebar for a list of more ways to help students who have trouble reading music. An excellent resource is the book *Music and Dyslexia*, which includes articles by musicians who have trouble reading music and researchers and teachers who have discovered adaptations that help with music reading.⁵ Another helpful book is *Instrumental Music for Dyslexics*.⁶ Both books are authored by British musicians and psycholo-

Tips for Music Reading

The following are a few ideas for helping students who have difficulty reading:

- Simplify parts whenever you can. For example, simplify rhythms, take out dynamic and other expressive markings, and enlarge music so it is larger and has more white space.
- Consider highlighting spaces with different colors. Use traditional highlighters or highlighting tape in different colors, which can be removed.
- For students who have trouble quickly tracking from left to right, you might ask for an aide who can read music to come to band or orchestra and use a viewer that helps force students to look at the correct part of the printed page.
- Some students have trouble focusing from near to far or far to near; this makes it difficult to read music and watch a conductor. It might be necessary to seat them where they can position their music so that they can see the conductor. This may require you to find alternate ways of setting up the ensemble.
- An alternate staff can help some students. In *Music and Dyslexia* (London: Whurr, 2002), Margaret Hubicki offers strategies for adapting notation.
- Students who have difficulty reading or remembering durations can benefit from software programs like GarageBand that can switch back and forth between traditional and graphic notation. Graphic notation, which seems to be more accessible for some students with reading problems, uses bubbles of different lengths to represent duration placed at different levels to show pitch.

gists who use the term *dyslexic* almost interchangeably with the term *specific learning disabilities*.

Regardless of what strategies you use, some students may never be able to read music fast enough to perform with a group. Students who are blind or have visual impairments can learn to read Braille music notation. It is an effective system, but not equivalent to reading traditional notation.⁷ Instrumentalists using Braille music can't read and play at the same time; therefore, it's completely impractical to expect them to use it for an audition.

Students with learning disabilities that affect their ability to read music should also not be required to sight-read in auditions. It's not fair to expect students with reading disabilities to read music for the first time under pressure. Astute music teachers will make sure this is written into such students' IEPs so future music teachers will know the extent of their ability to sight-read. Sight-reading on auditions for all-

state ensembles, music camps, and other activities should be waived for students who do not read well or at all due to a documented disability. If the IEP states that accommodations must be made for students, then we have a responsibility to make sure those are carried through in our classes.

Strategies for Writing and Playing Music

Many strategies that help students with disabilities can be integrated into the teaching of all students. If information is presented through multiple learning modes, a greater number of students will understand. Having students clap rhythms, stand up and feel the pulse by rocking back and forth, or engage in other movement activities can help all students "feel" the music. If you routinely integrate these teaching strategies into your teaching, you will find it less awkward to include students with disabilities in your ensembles (See the section on

Universal Design for Learning in the article by Kimberly McCord and Emily Watts in this issue of *MEJ*.) Sometimes, however, specific adaptations will be needed.

Band director Beth Nuss of Paxton, Illinois, has had students with reading and writing disabilities use a felt or magnetic board to physically place notes on the staff rather than trying to draw them.⁸ Students who might benefit from using this strategy are those whose IEPs mention using manipulatives. Nuss eventually transitions students to write-on/wipe-off boards for writing music notation. The larger writing surface helps students who have trouble writing on smaller staves.

Students with spatial confusion might have trouble matching up the clarinet fingering chart on the page with the actual instrument. These students might need to turn the clarinet around and look at the chart side-by-side with the clarinet. Placing a trombone on a table so the slide can be looked at from the same direction as written in the slide position chart helps trombone players.

Students who are blind or visually impaired can participate in marching band with a sighted buddy. The two students have a string attached between them, and the student with the disability can feel which way to turn and maintain the correct amount of space from the buddy; however, the student with the disability needs to decide if these adaptations are comfortable. Just because an adaptation exists doesn't mean it's appropriate for the student; students should be given the option of using the adaptation and not be penalized if they feel the adaptation draws embarrassing attention to them.

There are many other excellent strategies for adapting music for students with visual, auditory, spatial, memory and organization problems, which affect large numbers of students with specified learning disabilities. Inability to sequence steps, impaired sense of time, and difficulty remembering to bring the instrument, equipment, or books to class are not uncommon with these students, and music teachers should

work with special educators to learn what to do to help. Visit the Illinois State University Music and Students with Disabilities Web site at www.coe.ilstu.edu/mese for additional strategies and lesson ideas for a variety of children with disabilities. Share your ideas with others by posting your success stories.

Interacting with Students with Disabilities

Most students with disabilities are painfully aware of the differences between them and their typical peers, and they very much want to be able to participate in activities that others take part in. For many children with disabilities, music is the one place in school where they are successful. Instrumental music can be a challenge if we expect these children to learn and participate using the same methods typical students use. The easiest way for us to teach is not always the easiest way for students to learn.

Most children with disabilities try to hide their disabilities and worry about other students making fun of them. It is important that your classroom be a safe place where students can focus on learning to play an instrument and not worry about being called stupid. It can be very difficult with a large number of students to stay on top of how every student is behaving. Try to be aware of what goes on in your room, and set an example by demonstrating respect for all students.

Sometimes we have to remind ourselves that each child is an individual with a specific set of strengths and limitations. Children with disabilities cannot all be taught the same way. Try to find time to meet with each student with a disability and ask how you can help him or her to learn and participate. Often, students will be able to help with ideas. If they know you're supportive, you'll have a more open line of communication. Let your students know that you want them to enjoy playing an instrument and participating in an ensemble. Sometimes, despite your good intentions, you'll find that you're at a loss for effective strategies to work with

a student with special needs. When this happens, ask the special educator or parents for ideas.

Working with Other Professionals

If the child is receiving occupational or physical therapy, that professional can explain to you what types of physical limitations the child has and how they might affect playing an instrument. The therapist may be able to work on exercises that would help the child hold and play an instrument. Some children with speech problems may have trouble articulating on a reed instrument. The speech therapist can provide exercises and ideas that might help.

Your biggest lifeline is the special educator. This person can help explain students' disabilities and offer ideas for adaptations. Sometimes the special educator doesn't understand what's involved in instrumental music. Use the sheet for special educators in the "Collaboration and Access for Our Children: Music Educators and Special Education Together" by Kimberly McCord and Emily Watts in this issue of *MEJ* to help you articulate what skills and behaviors are involved in your class.

One Teacher's Story

It's encouraging to hear that instrumental music teachers are successfully including students with disabilities in their classes and ensembles. String teacher Mike Govert had great success adapting the *Essential Elements* string method for a student with Down syndrome. The following is his story. We hope it will inspire you to be creative in finding ways to teach your students with disabilities.⁹

"I began working with my student when she was in the third grade. She has Down syndrome with moderate mental retardation. I started working with her in private lessons and had her take part in my beginning string ensemble.

"The violin fit her well physically, and I was able to help her develop good postures and technique with both the left and right hand. I wrote

the string names in pencil on her bridge so she could see them when she played. I put bright blue tapes on her fingerboard to show finger placement. She responded well to the many rote exercises we did placing the fingers on the strings and singing the notes we were playing. After a time, she knew the music alphabet and how to use her fingers to play notes on her violin; however, she just could not read off the staff. I made flash cards and worked to help her memorize, but, though she could identify notes on flash cards, she couldn't read them in her lesson book. She began to get frustrated.

"I decided to design a notation she could use easily—one that would teach her the concept of pitch, time signature, note value, measures, and rests. Figure 1 shows what I came up with. I wrote the note names in bold uppercase letters. The font size of the note denotes its value (half notes are twice as large as quarter notes). Note placement is staggered vertically according to pitch (A is higher than G, etc.). Each song includes a time signature, bar lines, rests, and bow markings. I designed this myself using the Macintosh program Clarisworks.

"The notation worked very well for her, so I rewrote much of her *Essential Elements* book in this notation. I added exercises in her lessons to help her learn to read off the staff. Using masking tape, I made a large staff on the floor of our room. On small paper plates I drew a treble clef and uppercase letters of the musical alphabet. At lessons, I would have her put the clef and notes in their correct position on the staff. When she got good at this, I would have her construct tunes she was playing with the plates, and then we would 'walk the song' (in rhythm) on the staff. This method was especially helpful when she had to learn the difference between the D string, and D on the A string—saying 'high D' actually meant something to her. By the time she was in seventh grade we didn't need the paper plates, and she was finally able to read music on the staff. Whenever she had a problem, we

Mike Govert designed this notation to help a student with Down syndrome who had trouble reading music while playing. Larger notes have a longer duration, and notes are staggered vertically according to pitch. Eventually, the student using this notation was able to make the transition to reading traditional notation.

Repeat Sign



Repeat the section of music enclosed by the repeat sign.



Michael Row the Boat Ashore

$\begin{matrix} F\# \\ C\# \end{matrix} \frac{4}{4}$ — $\overset{\square}{D}$ F ||: A F A B | **A** F A | **B** **B** | $\overset{\vee}{A}$ $\overset{\square}{F}$ A |
 A F G F | **E** D E | $\overset{\vee}{F}$ **E** | $\overset{1.}{D}$ D F || $\overset{2.}{D}$ — ||

Texas Two-String

$\frac{4}{4}$ $\overset{4+}{A}$ A — | $\overset{4+}{D}$ D — | A A A } | D D D } ||

Figure 1. Modified Notation Example

would go to the staff on the floor and walk the section of music she was having trouble with.

“Once she began reading music, there was another adaptation I needed to make for her. She would get very overwhelmed looking at a typical page out of her method book—especially when we got to her second book, *All for Strings*, Book 2. The pages were just too packed for her to handle. Some songs would have eight or more measures in a line (causing notes to be very close together), and everything would be packed into a page crowded with other songs, études, and pictures. Using notation software, I began rewriting pages so there were only one or two songs per page and no lines with more than four measures in any song.¹⁰ I also found that aligning the note spacing so it was “mathematically

perfect” helped her to better see and decode rhythmic relationships.

“My student will be graduating from high school next month. I still go to her house once a week to give her a violin lesson. She is now playing out of *Suzuki Violin School*, Volume 2 and loves her violin. Working with her has been the most rewarding experience of my teaching career.”

Notes

1. Although the story presented here is true, the student’s name has been changed to protect her identity.
2. Barbara Elliott, *Guide to the Selection of Musical Instruments with Respect to Physical Ability and Disability* (Saint Louis, MO: MMB Music, 1982).
3. Amendment to *Individuals with Disabilities Education Act*, Public Law 17, 105th Cong. (June 4, 1997).
4. Kimberly A. McCord, “Music Com-

position Using Music Technology by Elementary Children with Learning Disabilities: An Exploratory Case Study” (doctoral dissertation, University of Northern Colorado, 1999).

5. Tim Miles and John Westcombe, eds., *Music and Dyslexia: Opening New Doors* (London: Whurr, 2002).

6. Sheila Oglethorpe, *Instrumental Music for Dyslexics, A Teaching Handbook* (London: Whurr, 2002).

7. Wayne Siligo, “Enriching the Ensemble Experience for Students with Visual Impairments,” *Music Educators Journal* 91, no. 5 (2005): 31–36.

8. Beth Nuss, e-mail message to author, May 2005.

9. Mike Govert, e-mail message to author, May 2005.

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