IEPs in the Band Room: How to Successfully Teach Students of All Abilities

Session Presenter: Laura Meehan

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What is This?
INSTRUMENTAL MUSIC FOR SPECIAL LEARNERS

By making minor adaptations, instrumental music teachers can find ways to include special learners in their classes.

BY STEPHEN F. ZDZINSKI

Teaching special learners in the general music classroom is a commonly accepted concept, but the idea of teaching instrumental music to special learners is less common. The wide variety of cognitive, physical, and social abilities and disabilities possessed by “special learners” makes the task of inclusion a challenge, especially for the instrumental music teacher who must keep in mind the individual modifications and instructional goals needed to successfully teach such a student. However, instrumental music teachers can successfully teach learners with a variety of disabilities to play band and orchestral instruments by making minor modifications to traditional instrumental teaching techniques and by employing approaches used primarily in special education. With these adaptations, inclusion of students with special needs into the regular instrumental music program can take place.

Students need to be individually evaluated to determine both instrument preference and instrument suitability related to their particular disability.

Adapting Musical Instruments
An essential step in the teaching of instrumental music to special learners is selecting appropriate instruments. Students need to be individually evaluated to determine both instrument preference and instrument suitability related to their particular disability. For students who are mentally challenged, valved brass (trumpets, baritone horns, valved trombones, and tubas), single reed woodwinds, and percussion instruments are suggested by several sources as the most appropriate choices. If possible, the music teacher should confer with the special education teacher to determine the extent of any developmental limitations that may affect the student’s ability to play a specific instrument.

For students with significant physical challenges, a variety of band and orchestra instruments may be appropriate if selected carefully. Consultation with the school’s occupational or physical therapist before an instrument is chosen will provide useful guidance, especially in determining the physical suitability of the instrument. The student’s instrument preference must also be considered. Modifications may be needed such as holding adaptations, mouthpiece adaptations, or, in the case of percussion instruments, beater adaptations. Donna Chadwick and Cynthia A. Clark offer numerous suggestions for these alterations. The sidebar lists resources for helping teachers accommodate students with disabilities in the music classroom.

Adapting the Social Environment
An instrumental music teacher who plans to include a learner with a dis-
ability needs to take several steps in order to ensure that the learner will be accepted into the ensemble. The initial step is to prepare the class for a new “special” student and to assign a “buddy” to help the student with new rules and instructional work. In preparing the class, care should be taken to explain to the students how the learner with special needs may be like and unlike them and what accommodations might be needed for this new student. In creating a suitable social environment, the instrumental music instructor will also need to prepare the special student for the music classroom. Classroom conduct rules and routines must be explained. These include such matters as respecting others, knowing how to request assistance when needed, rules for working in groups, proper procedures for participating in class, listening to and following directions, and understanding teacher and student roles. The student must be treated in a sensitive, yet non-patronizing manner that maintains his or her dignity.

Another way to adapt the social environment for the learner with special needs is through the use of positive image-building techniques, similar to those used in the Great Expectations Band Program. For example, the teacher can select goals for the student that are readily obtainable and ask the student to repeat each goal until it is mastered. Any progress towards those goals is reinforced while negative experiences are de-emphasized, so that the special learner continues to visualize positive outcomes. Comparisons with traditional students should be avoided, as their progress may be quicker and thus discourage the special learner.

**Parental Involvement**

One way to successfully adapt the social environment for special learners is through the informed use of parental involvement strategies. In special education settings, parental involvement is a vital part of the instructional mix. Research indicates that the following parental strategies are related to more positive student attitudes and greater achievement in music:

- singing with the child
- taking the child to school and nonschool concerts
- talking to the child about his or her progress in music
- listening to music with the child at home
- assisting with the child’s practicing
- providing musical materials for the child
- providing transportation to the child
- taping performances of the child
- attending meetings of music parent groups.

In special education settings, parental involvement is a vital part of the instructional mix.

Parents who have little aptitude in music are able to follow the above strategies. They can be given a list of these items and asked to assist in their child’s instructional process in these ways.

**Adapting Music**

Reading written notation is troublesome for students with visual information processing difficulties. Instrumental music teachers may need to adjust their traditional method of teaching music reading skills. An aural approach to teaching notation, as outlined in Stanley L. Schleuter’s book *A Sound Approach to Teaching Instrumentalists*, may be very effective in teaching special learners to read musical notation. In this approach, aural experiences start with singing songs that are familiar to the students; then notation for these songs is provided. In addition, flash cards with pitch and rhythm patterns extracted from the songs are used to reinforce music reading.

Another approach that has the potential to help learners with special needs to read music is the use of color-coded notation. George L. Rogers, in his research with traditional band students, utilized color to distinguish various note values or pitches. While the results do not show statistically significant differences in achievement, students using the colored notation appear to prefer it. The use of color-coded notation may enhance the comprehension of musical notation by students with visual processing and mild mental disabilities, as they tend to learn better with information presented in multiple modalities.

When selecting music for learners with special needs, the instrumental music teacher must keep in mind the differing ability levels of the special learner and the other students in his or her program and then adapt the music accordingly. Larry Williams suggests that well-known and catchy tunes, such as “Jingle Bells,” “Ode to Joy,” “When the Saints Go Marching In,” “Bingo,” and “Row, Row, Row Your Boat,” work well with developmentally disabled students. When arranging music that includes learners with special needs at the beginning level, the teacher can use unison, two-part, or three-part music, as well as partner songs and rounds. The ability level of the student may require that more difficult music be simplified in one of several ways. Students may be responsible for only one or two pitches and play only when those pitches are sounded in the ensemble, much in the manner of writing used in handbell choirs. Parts may be rewritten, eliminating difficult rhythmic passages using quarter, half, and whole notes that follow the harmonic progression of the music.

**Adapting Teaching Techniques**

Two approaches that may be helpful in teaching instrumental music to the special learner are task analysis and
precision teaching. In task analysis, teachers break down complex technical and musical tasks into their prerequisite steps, creating more manageable and more easily obtainable goals. Instrumental techniques such as embouchure, holding position, breathing, and fingerings can be broken down into subskills that can be thoroughly taught and reinforced and then combined after mastery. When teaching students with special needs various facets of instrumental technique, task analysis can provide the teacher with the means to analyze situations that have gone wrong and therefore more quickly remediate problems as they occur. Breaking instruction into smaller steps helps the special learner experience more success.

Below is an example of task analysis for teaching students to make the proper embouchure for brass instruments:

- make horse noises
- make motor noises (slow to fast)
- put fingers on each side of your nose
- put fingers on your lips and make motor noises
- buzz without the mouthpiece
- put the mouthpiece on your nose and then bring it down to your lips
- buzz with the mouthpiece (natural pitch)
- make buzzing sirens (high and low)
- buzz with the mouthpiece and the instrument.

The Great Expectations Special Education Band Program uses task analysis extensively in instrumental music instruction. In addition, the program uses a teaching and measurement technique borrowed from special education called “precision teaching.” Teachers using this approach set goals for each student and then continuously measure and chart the student’s progress through daily testing. Error patterns are analyzed in order to modify instruction so that the learner who is developmentally disabled makes steady progress. Progress is charted and recorded on the attainment of all goals, so that the teacher can decide if any goal needs to be further subdivided through additional task analysis. If the student is not meeting his or her goal, the objective is modified so that the student is able to make progress. In this way, students can make slow but continual progress that can be documented with appropriate reinforcement provided.

Adapting Evaluation Techniques

When working in instrumental music classes with learners who have special needs, teachers may need to modify evaluation techniques. Technical goals, musical content goals, and social goals should be included in their grading criteria. Students who have unique difficulties with auditory or visual perception may require both aural and written directions. Students with shorter attention spans may need more frequent, less lengthy testing situations. Anxiety may also be a problem, especially if test objectives are too difficult. More frequent testing with less complex objectives may help.

Evaluation and grading should be used to help build positive images. Instruction will need to be adapted and segmented to show continuous progress. While progress may be slower, attainment of each objective should be documented and charted to show progress, so that students and parents will not become discouraged.

Instrumental music study goals should be included in the student’s Individualized Education Plan (IEP). Grading adaptations, if appropriate, should also be included in a student’s IEP, and grading should be based on the attainment of IEP objectives for instrumental music. In some cases, traditional letter grades may be less appropriate than alternative grading systems, such as pass/fail grading, mastery-level grading, or the use of portfolio assessment. In all cases, instrumental music teachers need to be involved in the development of the IEPs of special learners in their music classes.

Conclusion

Students with disabilities can be successfully included in instrumental music programs, as long as teachers are ready and willing to find ways to accommodate the needs of these students. Instrumental teachers may have to seek the assistance of parents, other students in the program, preservice music teachers, or music therapists. Instruments must be selected carefully and adapted as needed, taking into consideration physical, musical, and social factors. Classes should be pre-

Resources for Accommodating Students with Disabilities in Music Classes


pared for the inclusion of a “special” student. Additional self-esteem enhancement and parental involvement strategies may prove useful. Once the student is mainstreamed into the instrumental class, complex tasks may need to be broken down into simpler subtasks, and music may need to be simplified for the student. Grading may also need to be modified and should include both musical and social objectives. These strategies will take time and additional resources for the instrumental teacher. With a little effort, however, teachers can include learners with special needs in their instrumental classrooms and can help them include instrumental music in their lives.

Notes
2. Barbara Elliot, Guide to the Selection of Musical Instruments with Respect to Physical Ability and Disability (St. Louis: Magnamusic-Baton, 1982).
3. A measure such as Gordon’s Instrumental Timbre Preference Test (Chicago: GIA, 1984) may be used.
5. Williams, “A Band That Exceeds All Expectations.”
10. Ibid. (The Great Expectations Program has been incorporated into the special education curriculum of the Great Falls, Montana, Public Schools.)
Teaching Music to Special Learners: Children with Disruptive Behavior Disorders
Shannon K. de l'Etoile
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What is This?
Teaching Music to Special Learners: Children with Disruptive Behavior Disorders

By Shannon K. de l’Etoile

Teachers can help children with behavior disorders, such as ADHD, by learning more about the origins of the disorders and implementing strategies that meet these students’ needs.

The educational practice called inclusion has brought increasing numbers of children with disabilities into the music classroom, many times without the teacher being informed of these students’ unique needs. In order for music teachers to successfully teach in an inclusive classroom, they must be prepared to work effectively with special learners, including children with disruptive behavior disorders. Music teachers recognize the need for such preparation, and teachers who receive specialized training feel more capable of working with children who have disabilities.

Disruptive behavior disorders can be deceptive, in that the child may display no outward physical signs of a disorder and may have normal or above normal intelligence. Consequently, a music teacher may be caught off guard if a child becomes non-compliant or behaves aggressively. In order to manage and prevent disruptive behaviors, music teachers need to understand the origins of the child’s disorder, which may be a neurological problem or a learned response. In this article, readers will find descriptions of three prominent disruptive behavior disorders and their origins: learning disabilities, attention-deficit/hyperac-
tivity disorder, and emotional and behavioral disorders.

To help children who have these disorders, teachers can implement specific classroom strategies based on a learning model, such as cognitive behavior modification (CBM), that has produced positive outcomes for special learners. CBM is a unique blend of three other well-known learning theories: (1) operant learning or behavior modification, (2) social learning theory, and (3) cognitive theory and cognitive training. Teachers can facilitate operant learning by providing consistent consequences in order to shape behaviors or systematically presenting course content. By acknowledging the affective, cognitive, and behavioral variables that contribute to learning and by modeling desired behaviors, teachers can incorporate social learning. This approach helps students understand the meaning and value of the knowledge to be gained, thus improving their motivation to engage in the learning task. Finally, by using cognitive theories based largely on the ability to self-regulate and self-evaluate, teachers can impart problem-solving skills, thus helping students to construct new knowledge to the best of their abilities.

The combination of theories compels students to become actively involved in the learning process and use compensatory strategies as needed. All of the teaching techniques outlined in this article are based on the CBM model of learning. As such, they can help music educators provide an effective learning environment and minimize behavior problems in the classroom or rehearsal hall.

**Learning Disabilities**

Children with learning disabilities are appearing in alarming numbers in the educational setting; almost half of the more than six million students who now receive special education services each year are identified as having a learning disability. Working with this population requires a basic understanding of the learning process. When a child learns something new, physical and chemical changes happen in the nerve cells of the brain. These changes help to establish efficient neural networks that allow different areas of the brain to work together. Such networks become stronger over time and with repeated use. Thus, a child can store information in his or her memory and access it as needed.

For children with learning disabilities, this process is disrupted. Neural networks may not function efficiently, resulting in difficulty storing and retrieving information from long-term memory. This memory deficit may impair a child's ability to use many typical learning strategies, such as grouping similar items, recognizing symbols, following sequences, and linking sounds with visual images (i.e., letters and words). Essentially, a child with a learning disability has difficulty perceiving sensory patterns that are critical for connecting separate pieces of information.

Academically, children with learning disabilities fall significantly below what is expected for their age, education, and level of intelligence. They are likely to show deficits in fundamental academic areas, such as reading, writing, or math, and they may have difficulty reading social cues. Despite their best efforts, these children often find themselves lagging behind. As a result, they are less likely to acknowledge their successes and tend to become overwhelmed by their failures. These children often are easily discouraged and have poor self-esteem and a low tolerance for frustration. In order to avoid academic work, they may act out or complain of physical ailments. Music teachers must be cognizant of both academic and psychosocial concerns in order to facilitate a successful learning experience for children with learning disabilities.

Drawing from the CBM model, music teachers can utilize both social-learning and cognitive-training concepts when working with students who have learning disabilities. In reference to social learning, these students learn best when new information has both relevance (i.e., is clearly important) and meaning (i.e., makes sense). By emphasizing these two concepts, teachers will garner students' attention and help them to engage more fully in the learning process. Sometimes the relevance of a new skill may be quite obvious to the teacher, but not to the student. For example, a teacher might need to explain, "We're clapping the rhythm first, so that we can play it the right way on the xylophone." In response, a child who is not interested in clapping, but very motivated to play the xylophone may suddenly begin clapping with great enthusiasm!

Using cognitive training, music teachers can help children with learning disabilities acquire specific strategies for learning. When learning new information or skills, most children automatically use some type of strategy, such as categorizing or grouping similar items. A child with a learning disability, however, may not utilize such strategies. Furthermore, this child may have difficulty identifying what strategies to use and how to evaluate their effectiveness. The ability to utilize and monitor learning strategies is referred to as metacognition. Children who use metacognitive strategies are better able to organize their thought processes and their learning materials. Such strategies can help them to compensate for deficits in other academic skill areas.

One metacognitive strategy that teachers can easily implement is an advance organizer, a structured overview of what will be learned that is presented at the start of each class, rehearsal, or lesson. A teacher can provide an outline on the chalkboard, through a handout, or, with younger
Children, on a picture board. In all situations, teachers should review the content of the advance organizer with the students. This approach gives students a general framework for material that they are to learn, helping them relate it to what they already know and thus forming more efficient neural networks.

Children with ADHD function best when learning activities are brief and when intense cognitive tasks alternate frequently with hands-on experiences.

Another metacognitive strategy that teachers can use to help students learn new information or skills is the mnemonic device. This strategy provides an organizational framework for rehearsing and later recalling information. For example, many students learn the names of the spaced notes of the treble clef as FACE and the names of the lined notes by memorizing the phrase Every Good Boy Does Fine. These acronyms are mnemonic devices that help reduce the amount of information one must hold in short-term memory. Reducing the short-term memory load helps learners transfer information to long-term memory more quickly and efficiently.

Music teachers can create mnemonic devices to help students learn procedures, such as how to best prepare themselves and their materials for rehearsal time. A simple example would be the acronym SMILE. This one word can remind students to prepare by first assembling their music Stand, organizing their sheet Music, assembling or warming up their Instrument, and then Listening for further instructions. Finally, when the teacher gives a cue to begin playing, students are ready to Engage in the musical experience.

Mnemonic devices are most effective when teachers take the time to carefully teach the process. Teachers should first demonstrate each step and explain its purpose. This modeling process is critical to learning the strategy. Next, teachers need to guide students through the steps, giving them multiple opportunities to practice each one. Finally, teachers should provide feedback on student performance. From this process, students learn how to evaluate their own work and should eventually be able to automatically complete the new procedure. It's important to remember that students with learning disabilities are not only learning content, they are essentially learning how to learn. These students, therefore, require not only direct instruction, but also guidance in acquiring effective learning strategies. Though provided to help students with learning disabilities, these instructional techniques will most likely benefit all students in the music classroom.

Attention-Deficit/Hyperactivity Disorder

Teachers may observe that some children with learning disabilities also have difficulty paying attention. Such difficulties may indicate the presence of Attention-Deficit/Hyperactivity Disorder (ADHD), a diagnosis that sometimes shares many of the psychosocial features found in learning disabilities. The two disorders, however, have distinctly different origins and influences on learning. Some children may have ADHD but no learning disabilities, and vice versa. To work effectively with either group of children, teachers should be aware of the important differences between the two disorders.

Children with ADHD are likely to show signs of inattention, hyperactivity, and impulsivity. In regard to inattention, these children may have difficulty maintaining attention for the duration of a task. They may look dreamy or distracted and appear to not listen to directions. Hyperactivity is evident in children who exhibit physical activity at a rate and intensity that is much higher than expected for their age. They may fidget or squirm, have difficulty staying seated, and talk excessively. They may be described as always "on the go" or looking as if they are "driven by a motor." Impulsive behavior manifests itself through a general lack of ability to delay gratification; these children basically "act without thinking." Consequently, they may appear impatient, blurt out answers before the teacher has finished the question or interrupting other students' conversations. They will likely have difficulty waiting their turn, may initiate conversations at inappropriate times, and might touch or handle objects in the classroom without permission.

Students with learning disabilities are not only learning content, they are essentially learning how to learn.

Children exhibiting any combination of these challenging behaviors may leave a music teacher feeling exhausted and overwhelmed. Perhaps one of the best ways to cope with this reaction is to explore a theory that explains the behavior of children with ADHD. The optimal-stimulation theory states that all individuals strive to maintain a biologically determined optimal level of stimulation. That is, a certain level of internal or external arousal is needed for optimal cognitive and behavioral functioning to occur. Children with ADHD appear to have difficulty maintaining an optimal level of stimulation. They may have a higher need for stimulation than other children, or their central
Creating a Structured Environment

Children with ADHD are more likely to succeed in a classroom that is predictable, consistent, and structured. Here are some suggestions for creating a good learning environment for children with ADHD:

- Keep the room arrangement consistent from day to day.
- Use assigned seating, and place children with ADHD away from distractions and close to the teacher.
- Follow a consistent routine in each class so children learn what to expect and can modulate their behavior accordingly. Post this agenda so all children can see it throughout the class.
- Set clear expectations for desired behavior by discussing, posting, and frequently reviewing a brief list of classroom guidelines, stated in positive terms. For example: “Respect teachers, respect peers, and respect property.”
- Minimize downtime and make sure children have something meaningful to do during transitions.
- Prepare children for transitions by giving them a countdown to the end of the current activity and reminding them of the next activity.


nervous systems are perhaps wired so that incoming stimulation is highly filtered. Consequently, they may not receive as much stimulation as other children do from the same source. Their inattentive, impulsive, and hyperactive behavior is merely an attempt to obtain additional and, in some cases, adequate amounts of stimulation. Such behaviors are most likely to occur during tasks requiring prolonged attention and concentration and that students consider monotonous, repetitive, slow-paced, and too familiar. Teachers who understand these aspects of ADHD are better equipped to modify their teaching strategies, thus reducing disruptive behavior in the music classroom.

Effective teaching strategies for children with ADHD fall under the operant-learning component of the CBM learning model. By using operant-learning techniques, teachers help students focus their attention and control their impulses—skills that must be in place in order for learning to occur at higher levels. One of the best operant techniques teachers can implement is a predictable, consistent, and structured classroom environment. Essentially, a well-structured environment minimizes unnecessary distractions, thus helping children with ADHD to identify and focus on what is most important in the classroom. Students should then gain stimulation only from relevant sources. To provide this kind of environment, teachers may want to consider the suggestions in the Creating a Structured Environment sidebar.

Children with ADHD may also perform better when critical features of new information are highlighted in some way. For example, teachers can direct children’s attention to printed words or notation by using bold or colored print. To announce a transition between activities, teachers can use specific auditory cues, such as ringing a bell, playing a familiar chord progression on the piano, or asking an intriguing question. Enhancing the visual, auditory, or kinaesthetic features of a music lesson helps children identify the relevant aspects of the information and meets their need for additional stimulation.

Another way teachers can provide stimulation is by regularly integrating physical movement into musical experiences or allowing brief breaks for physical activity. This activity provides a temporary increase in stimulation and may help children perform more efficiently for the rest of the class period. Careful sequencing of activities during the lesson can also regulate stimulation. Children with ADHD function best when learning activities are brief and when intense cognitive tasks alternate frequently with hands-on experiences.

Emotional and Behavioral Disorders

Children with learning disabilities or ADHD may demonstrate disruptive behaviors in the music classroom. However, children without those disorders may have an emotional or behavioral disorder (EBD) that causes them to display similar, or even more upsetting, behaviors. To determine whether a child has an EBD, three basic criteria must be considered: frequency, duration, and intensity of the behavior. Regarding frequency, children with an EBD may display inappropriate behavior, such as crying, fighting or sulking, far more often than their peers. Duration should be considered when children engage in a problem behavior for a markedly longer or shorter time than their peers. For example, a child with an EBD may throw a tantrum that lasts an hour, as opposed to a few minutes. Concerning intensity, the magnitude or strength of a behavior may be unusual. A young child who expresses anger by threatening others or destroying property is likely to have an EBD.

Essentially, children with an EBD tend to respond to their environment in a way that differs, drastically and chronically, from their peers. Their behaviors may also be considered inappropriate for their age, culture, and ethnic background. While the signs of an EBD can vary widely from child to child, certain traits are consistently found. Children with an EBD tend to have lower intelligence and lower academic achievement. They are likely to have deficits in fundamental skills, such as reading and math. Another common trait is diffic-
By far the most common, externalizing behaviors are antisocial in nature and may involve high levels of physical activity, such as out-of-seat behavior and running around the room. Acts of hostility or aggression may also be evident, including hitting, fighting, stealing, destroying property, lying, and arguing. Some children with externalizing behaviors may be diagnosed with oppositional-defiant disorder or conduct disorder.

By contrast, children who exhibit internalizing behaviors have minimal social interaction with others. They tend to act immature, withdrawn, and even fearful. These children may frequently complain of physical ailments and withdraw into daydreams or fantasies. While their behavior may not offend others, a lack of social stimulation can impede their development. These children may be diagnosed with anxiety disorders, including post-traumatic stress disorder, or mood disorders, such as depression.

Some emotional and behavioral disorders, such as depression, have a clear biological basis, meaning the child most likely inherited a genetic predisposition for the disorder. Many disorders, however, are largely due to environmental influences. For instance, the home environment is typically where a child experiences emotional security or a sense of belonging. Children who do not experience emotional security at home will look for it elsewhere. They may do this in a positive way, such as by joining the marching band, or they may choose a negative path, like joining a gang. Furthermore, children who have observed and learned aggressive behavior at home are likely to either demonstrate similar behavior or act in a fearful way at school. Many children with EBDs experience inconsistent and unpredictable home environments. Consequently, they perceive little control over their lives. Being disruptive may give them the feeling that they have some control over the chaos.

The teacher who encounters children with EBDs must realize that the human brain is designed to first address survival and emotional needs. Until these needs have been met, the brain is unlikely to attend to any other information. Consequently, the best approach is to create the appropriate environment and to focus on the child's behavior, rather than trying to reveal and correct some inner disturbance.

A token economy can be quite simple. For example, a student could earn one star (i.e., token) for each new fingering exercise learned on the keyboard. Later in the day, the student can exchange stars for extra recess time. Other students may need to develop a sequence of behaviors, thus requiring a more complex token economy. For instance, a child in band may earn tokens each day by being in an assigned seat with instrument assembled by the start of rehearsal time. At the end of the week, the student could cash in all the tokens to purchase certain items or privileges from a “reward menu.”

Sometimes simply increasing a student's awareness of the desired behavior will bring about a large change.

Following the CBM model, operant-learning procedures can have a remarkably positive effect on the behavior of children with EBDs. Utilizing these principles, teachers can provide consistent reinforcement for desired behaviors through token economies or self-monitoring systems. These methods supply the external structure that is lacking for children with an EBD. Such structure helps children regulate their own emotions and behaviors, so that they can then successfully engage in the learning experience.

A token economy is similar to a “work-for-pay” economic system. Students can earn tokens for completed work or appropriate behavior and later exchange them for more tangible reinforcers, such as toys, compact discs, or special privileges. Token economies have great appeal for children and adolescents because they offer both immediate and long-term feedback. Students can gradually change both their academic and social behaviors and should ultimately demonstrate these behaviors without token reinforcement.
Self-monitoring systems can be similar to token economies, with one major difference: students are responsible for evaluating their own behavior. In a self-monitoring program, the student then monitors his or her behavior at regular intervals throughout the class period or once at the end of each rehearsal. The student could then read and score the self-monitoring statement (see figure 1 for an example) at the end of each rehearsal.

Sometimes simply increasing a student’s awareness of the desired behavior will bring about a large change in its frequency or duration. Another way to strengthen the impact of a self-monitoring program is for both the student and the teacher to monitor the identified behavior(s). When the teacher’s and student’s monitoring agree sufficiently, the student may earn tokens or a reward. Over time, the amount of agreement required before the student receives a reward should be increased. Ultimately, the student learns to modify his or her own behavior within the classroom environment.

**Conclusion**

Working with children who have disruptive behavior disorders can be both challenging and rewarding. Teachers who understand the origins of problem behaviors will be better equipped to address and prevent them. Music educators can obtain assistance in this endeavor from such resources as textbooks, Internet sites, other teachers, special educators, parents, school psychologists, administrators, and music therapists. The More Information sidebar lists a few helpful books that discuss behavioral disorders. Moreover, music teachers can rely on the cognitive behavior modification model for designing the most effective classroom strategies. Such techniques will help students to control their impulses, modify their behavior, and learn how to learn. As students acquire these fundamental skills, they will become better able to learn music, a worthwhile goal for all teachers and students.

**Notes**


5. Bos and Vaughn, “Approaches to Learning and Teaching.”


12. Bruce Shapiro, Robin P. Church, and
14. Ibid.


16. Swanson, Learning Disabilities from the Perspective of Cognitive Psychology.


26. Mather and Goldstein, "Understanding and Managing ADHD.

27. Zentall and Zentall, "Optimal Stimulation.


30. Ibid., 285–90.


34. Ibid.

35. Mather and Goldstein, "Building Blocks of Learning.


37. Bos and Vaughn, "Approaches to Learning and Teaching"; Deborah J. Huntington and William N. Bender, "Interventions for Attention Problems," in Learning Disabilities: Best Practices, 227–49; and Mather and Goldstein, "Understanding and Managing ADHD."

The following articles offer information on students with special needs or ideas for adapting lessons to help these students achieve success. MENC members can access any of these articles at http://www.menc.org/publication/articles/journals.html. Articles are also available in many library periodical databases.


Accommodating Band Students with Visual Impairments

Abstract: This article offers a discussion about some of the accommodations and modifications used in music instruction. The focus here is on the musical tasks and challenges faced by band students with visual impairments. Research and literature reveal an interest in the topic but a lack of accessible materials for immediate use in the classroom and rehearsal. The author seeks to broaden the discussion.

Keywords: advocacy, band, blind, high school, low vision, middle school, visually impaired

A major educational goal for the visually-impaired student is attaining a level of independence and self-assurance in all tasks, such as playing a band instrument. As a band teacher at a residential school for the blind, I have learned that success toward this goal occurs through the use of accommodations or modifications appropriate to the learning style of each student. Many types of music instruction involve visual presentations that challenge the visually-impaired band student. Overcoming these challenges requires the band teacher to be responsible for providing the necessary accommodations or modifications.

Each year, schools develop Individual Education Plans (IEPs) for all students with special needs. The IEP contains information about the student’s current educational needs and goals, special support services, and appropriate accommodations or modifications essential for the student’s education. One such IEP goal requires that the visually-impaired band student be provided musical parts and materials in braille. An accommodation for the IEP goal requires that the band teacher use the services of a professional or specially trained braille music transcriber. The band teacher can also purchase braille music-transcribing software that allows the production of braille music on-site.

This article focuses on how the band teacher can address accommodations or modifications concerning methods, materials, and technologies that can assist the visually-impaired band student with musical tasks and challenges. The discussion about musical tasks deals with the skills needed for reading music and playing a band instrument. Discussion of challenges features issues raised by teachers, students, and parents involving sight-reading, working with conductors, and participating in marching band.

With some simple modifications, your band students with visual impairments can share in many of the musical experiences of others in the ensemble.
Learning/Reading Styles

An important goal for band teachers involves helping all band students become independent learners by teaching them how to read music notation. Accommodating for reading music requires the band teacher to determine the learning/reading style of each student. For visual impairment, learning and reading styles focus on skills of visual, tactual (touch), or auditory abilities.

Visual learning uses print as the chosen reading medium, with accommodations focusing on visual clarity based on aspects of light, distance, or contrast. Distance refers to how close the music document is to the user's eyes. Often, users must move closer to the document being read; use optical aids, such as magnifiers or scopes; or get access to large-size printed material. Contrast involves the reflection of light off of two adjacent colors or surfaces, with the clearest being black against white. Enlargement of staff notation benefits students with issues involving distance; however, challenges can occur with enlarged documents when students are learning about differences between note stems and bar lines, staff lines and ledger lines, and note heads versus note stems. An accommodation for the visual learner who reads staff notation allows for writing letters under each note value or replacing staff notation with and alternative letter notation system, such as ABC notation or the VI music notation method.²

The tactual (touch) learner uses a system called braille that involves reading raised patterns presented individually or in combinations. For music notation, the braille music code represents all symbols used in music. The performer begins the learning process with a tactual reading of the musical score and commits the information to memory. The final step is to sing the passage or play it on an instrument. Accommodation for this reading method requires creating all documents in the braille format, providing an extension of time on task, dividing large sections into subsections to focus learning, and providing audio files to support rehearsals. Gradually, subsections are merged back together to create a larger musical passage. Comprehension and retention of all passages requires a process of review and repetition.

To facilitate this first accommodation, the band teacher can develop an understanding of the braille music code using...
A Challenge for Sighted Teachers

One way to help sighted teachers learn about the needs of the special learner with vision impairments is through a "blindfold challenge." This activity allows the blindfolded teacher to do a set of activities commonly done by the student throughout the instructional period. These include walking into and around the classroom, practicing instrument and mouthpiece assembly/care/maintenance and playing technique, reading music materials, and undergoing assessment methods. A trip to and around a performance space can also be enlightening.

The sighted teacher must also determine how to provide appropriate communication of both visual and verbal information, such as specific fingerings, walking to and from a rehearsal or performance, and conducting signals. An occasional repeat of the blindfold challenge can remind the music educator of some of the accommodations and modifications a visually-impaired student needs for success.

Bettye Krolick's book How to Read Braille Music as a resource. The braille music code is a letter notation method based on solfège, with the braille letter D representing the syllable do. The braille letters E through J represent a sequential pattern of the remaining solfège symbols. The conversion of syllables to music pitch changes do to musical pitch C but continues to be represented by the braille letter D. (This is a fixed-do system.)

Instructional options focus the braille music code on performance and nonperformance. Under the performance format, instruction aligns with the curriculum of the music method book being studied. The nonperformance format offers an independent course of study using a comprehensive curriculum, such as the one created by music educator Richard Taesch. A book of exercises written by braille music specialist Edward Jenkins provides reinforcement for both instructional options.

Braille music curriculum features five levels of instruction. The first level is a primer designed to introduce preband students to the practice of reading simple music symbols and performing them with syllables, numbers, or letters. The second introduces the beginning band student to the basic concepts of pitch (first octave) and rhythm (four basic rhythm patterns/rests) and general format (meters, key signatures, bar lines, and tempo). Level 3 provides performers with fewer than three years' playing experience a reinforcement of material at the first two skill levels, expands concepts of pitch beyond the first octave and accidentals, teaches some new rhythm (dotted and subdivisions), and introduces format (repeat symbols, ties/slurs) and expression (dynamics). The fourth level, for students with three or more years' experience, reinforces material learned at previous levels and introduces advanced concepts in rhythm, articulation, dynamics, music markings, and tempos. The fifth and final level continues to reinforce learning at previous levels, addresses advanced levels of performance, and concludes with concepts involving instrument specials, special effects, and multiple staff formats (as are used with keyboard, organ, and vocal improvisation). All levels of instruction focus on single-staff formats, but the learning can also be applied to multiple-staff formats.

The auditory learner has no reading medium but uses sound sources (human or recorded) for learning. Tasks involve teaching the student to memorize materials through imitation and repetition. Accommodation for this learning style requires the learner to listen to the sound sample first and then repeat back the sound sample by playing it on a band instrument. Additional accommodations involved extending time on task, dividing large passages into subsections, and providing appropriate sound recordings.

Band Instrument Accommodations

Each band instrument requires a unique set of skills to be mastered by the performer to demonstrate success on the instrument. Tasks common to both visually-impaired and sighted band students include assembly/maintenance, tone production, and technique; however, certain situations require accommodations.

Instrument assembly generally involves connecting specially designed parts to their appropriate counterparts, followed by an appropriate alignment of these parts to allow for proper operation of the instrument. The clarinet represents a good example of assembly challenges in which separate assemblies of the body and mouthpiece are required. The body of the clarinet divides into five different parts, but only the middle key sections and mouthpiece require alignment. Accommodations for alignment involved placing Velcro dots on the back of the key barrel to serve as tactual reference points. Mouthpiece assembly requires teaching the student to place the flat side of the reed on the flat side of mouthpiece, align the reed using the index finger as a guide along the edge of the mouthpiece, and secure the reed to the mouthpiece with the ligature.

Tone production involves a visual or auditory demonstration. Often, the band teacher produces an appropriate sound on the instrument. For the visually-impaired band student, a verbal description combined with the visual presentation (for the rest of the class) serves as an accommodation and reinforces the visual presentation. One challenging presentation involves teaching the student the “buzzing” used with brass instruments. The first step would involve teaching the student to relax the embouchure by doing a playful “fluttering” of the lips without using the mouth-
The next step repeats the process but adds the mouthpiece. Finally, once confidence is apparent in these two steps, the actual buzzing process begins.

Technique requires the visually-impaired band student to demonstrate fingering and hand skills required for a particular instrument. The level of difficulty varies between instruments. Some instruments are more challenging than others. An accommodation involves placing Velcro dots on finger keys to indicate specific placement of the fingers or spacing between fingers. In the brass family, playing the trombone requires moving a slide to specific unmarked positions. Accommodation for this requires use of the fingers of the slide hand, which are positioned in relation to the trombone bell. The outer two positions require extending the arm to two positions, one longer and one shorter. In the percussion family, playing a drumhead or mallet keyboard raises an issue of orientation. Accommodating orientation requires that the student receive physical assistance from a second person; this individual would teach orientation by positioning one hand on the instrument head or bar while the other hand strikes. (The helper might also combine both of these as a single accommodation.) Finally, secure a label to the keyboard in a way that avoids damage to the instrument’s color or sound quality. Many of these tasks require additional accommodations, such as extended learning time and repetition of the task to reinforce learning.

Technology

Creating accommodations for the visually-impaired band student requires the use of both standard and adaptive technologies. These technologies include both software and hardware, and they often require special funding toward the student’s education. Software programs may encompass braille transcription, music notation, music recording, optical character recognition (OCR) scanning, screen magnification, and screen reading. Hardware may include closed-circuit television, braille embossers, and large-print printers. Dancing Dots and Opus Technologies are two major vendors of adaptive music technologies.

Audio recording programs, such as Sonar, Studio Recorder, and Audacity, are examples of technology that can help provide a primary accommodation for the band student. These programs can produce audio files for assistance in developing reading and playing skills, recording and evaluating individual
performances, or general listening to understand the overall performance of a musical work. These programs create or allow downloading of files in MIDI, WAV, or MP3 formats.

Music notation programs, such as Sibelius or Finale, can be used to create both audio and document files.\textsuperscript{11} The program saves the audio portion of the file and exports it in an audio format, allowing transfer and saving of the final to compact disc or tape. The document file creates a large-print document by modifying the properties of the document. Compatibility issues exist may arise between screen-reading and notation programs; however, a program called Sibelius Speaking 3 has demonstrated success on a limited basis.\textsuperscript{12}

Accommodations involving large-print music documents can create the challenge of excessive page turning. A new screen technology called the music reader presents a digital image on a large screen and allows pages to be turned using a foot pedal. The technology begins with a computer program creating the music file and continues with saving the music file to a memory/flash drive, and finally uploading the music file into the reader. Dancing Dots and Music Reader are two of the current vendors of this technology.\textsuperscript{13}

Braille music transcription software, such as Goodfeel and Toccata, can be used to help teachers and students create braille music documents as needed.\textsuperscript{14} Both programs come with an OCR scanning program called SharpEye, which scans, edits, and converts the music document into a notation interchange file format (NIFF) file or extensible markup language (XML) format.\textsuperscript{15} Although these programs provide for uploading MIDI files, the synchronized accuracy creates conflicts in the transcribing process.

**Challenges**

Each year, my work as a band director for students who are visually impaired results in inquiries from teachers, students, and families around the United States about sight-reading, working with conductors, and participation in marching band. Here are some of the things I have learned.

**Sight-Reading**

Professional flutist and psychologist Thomas Wolf defines musical sight-reading as the ability to perform music from a printed score or part for the first time.\textsuperscript{16} The process involves simultaneous reading and performance skills, and it is often used for evaluation and assessment. In this situation, a challenge develops for the visually-impaired band student, who will require accommodations or modifications similar to those used for standardized tests.

The type of accommodation required for sight-reading depends on the individual student’s needs. All musical passages used must conform to the learning/reading style of the student, be that visual, tactile, or auditory. The visual learner requires enlargement of documents to large-print format. For the nonvisual learner, the use of alternative methods of musical notation requires memorizing music for performance. Accommodations for memorization use a division of the musical passage into subsections for reading and performance and require extra time to allow the student to complete the task. Additional accommodations addressing the auditory learner require the presence of a second person to read or perform the passage in question before any performance by the student.

As an advocate for the student, the band teacher needs to support the participation of the visually-impaired band student in activities that provide the student an opportunity to be challenged and evaluated equally with sighted peers.

**Working with Conductors**

A primary duty in conducting involves providing appropriate communications using visual cues and signals. For the visually-impaired band student, the visual system of cuing and signaling creates a challenge that requires the conductor to make simple accommodations or modifications. Prior to any rehearsals, the conductor needs to be informed of the special needs of all performers, including the visually-impaired band student, to determine necessary preparations and possible alterations to conducting and rehearsal techniques. A first accommodation is a meeting between the conductor and each student with unique challenges to determine the strengths and needs of each.

Next, a system of verbal cues needs to be created to communicate starts/stops, countdowns, cutoffs, and restarts. The need for verbal cuing will be greatest during the initial rehearsals and decreases as the performer gains a greater awareness of the conductor’s technique and timing. If required during a performance, verbal cues or signals should be used in mini-segments. A third accommodation encourages placing the student in a special seating arrangement, such as the middle of the first row, where all verbal cues can easily be given by the conductor and received by the performer.

The performer’s knowledge of the music literature and level of musicianship determine the level of assistance required by the conductor. My conducting experiences working with visually-impaired band students involve the combination of students from various schools for the blind in a unified festival ensemble as well as in school concerts. The results suggest that rehearsal periods focus on general starting and stopping of sections in the music as well as sections representing unison rhythm patterns. The motivation of these students to perform well usually produces excellent results.\textsuperscript{17}

For purposes of advocacy, the band teacher and conductor need to encourage participation in special activities, such as festivals and multischool concerts, since these events provide the student with an opportunity for equal participation with sighted peers along with expanded knowledge of conducting and interpretation of musical literature.
Participation in Marching Band

Marching band represents a major activity for all band students, but it also creates some musical and nonmusical challenges for those with visual impairment. Many of the musical challenges encountered have already been discussed here; however, the nonmusical challenges touch on skills involving awareness of surroundings and travel, known to the visually-impaired community as orientation and mobility. The primary goal of orientation and mobility instruction is to make the student an independent, self-sufficient traveler, which at first glance might seem to conflict with the marching band goal of unifying all performers into a single ensemble. Resolving issues and providing appropriate accommodations requires collaboration between the band teacher and the student’s orientation and mobility specialist to determine the best options for all involved.

For the visually-impaired band student, marching band participation offers passive and active options. Passive participation involves the student as a nonmarcher who performs with a band instrument on the sidelines with the drum pit group. Active participation places the student on the field, marching with sighted peers. For help in molding the student into an active participant, I recommend an article written by Iowa Braille and Sight Saving School band director John Best called “Marching Band for the Visually Handicapped.” In this article, Best discusses the step-by-step process for developing the visually-impaired marcher. The article begins with an introduction to basic marching skills and progresses to squad-level participation.

Standard accommodations for this activity include sight-guided assistance, dividing instruction into smaller segments, and extending learning time. The most effective accommodation involves sighted-guide assistance. The traditional sighted guide serves as the eyes of the student and provides travel assistance. For marching band, the guide positions himself or herself alongside the student and slightly behind, providing directional assistance with shoulder holds. Changing to the opposite shoulder requires the guide to use the opposite hand, move that hand across the back of the student, and reposition the hand on the student’s opposite shoulder.

For many years, school marching bands have allowed the participation of students with various levels of visual impairment. In recent years, news media have increasingly featured
visually-impaired musicians. A significant story involved The Ohio State School for the Blind Marching Band, whose members marched in the 2010 Rose Parade in Pasadena, California. Band teachers face many challenges, but seeing a band student with a visual impairment succeed in a challenging activity, such as a marching band performance, provides reinforcement and confirms many of the reasons these educators entered the music teaching profession in the first place. I highly encourage band teachers to demonstrate advocacy for all their students by actively involving them in marching band.

Musical tasks that sighted band students perform can be performed equally well by visually-impaired band students with the assistance of accommodations and modifications. The band teacher plays a key role in advocating for the visually-impaired student by supporting this individual and providing the appropriate modifications and accommodations so the student can succeed. When successful, the visually-impaired band student demonstrates a high level of independent learning, which leads to a level of completion toward the major educational goal of independence and self-assurance.

NOTES

11. Sibelius (www.sibelius.com); and Finale (www.finalemusic.com).
15. SharpEye (www.visiv.co.uk).
Disability in the Classroom: Current Trends and Impacts on Music Education
Joseph Abramo
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What is This?
Disability in the Classroom
Current Trends and Impacts on Music Education

Abstract: This article covers current trends in disability rights and raises questions about how society’s views of disability influence the music education of students in need of special education services. Brief overviews of the disability-rights movement in the United States and of federal laws pertaining to disabilities and education are included. Next, there is a discussion of the “social model of disability,” which defines disability as a social position rather than a medical condition. Finally, “people-first language” and how it applies to music teaching are examined. The article also offers some suggestions to help educators incorporate these ideas into their teaching.

Keywords: disabilities, disability rights, people-first language, social model of disability, special education

The definition of the term disability might seem obvious, but consider this: Both Johann Sebastian Bach and Ludwig van Beethoven developed disabilities later in life. Bach’s vision faded into total blindness, and Beethoven lost his hearing. Yet, Bach still wrote the Art of the Fugue and Beethoven composed his Symphony no. 9 after the onset of their impairments. Did these composers overcome their disabilities, or is it possible that these disabilities actually contributed to their greatness? Is it even possible that Bach and Beethoven would have written inferior music if they had not developed these disabilities? While Bach and Beethoven are extraordinary examples of people with disabilities creating music, individuals with disabilities and surprising musical abilities are not limited to these geniuses. Recent research in neuroscience suggests that individuals born without sight are more accurate in their pitch perception and spatial placement of sound sources than are those with vision. Similarly, people with autism have a higher rate of perfect pitch than does the general population. In some ways, disabilities do not “disable” people but, instead, empower them to be “extra able” in music.

These facts prompt us to ask some interesting questions: What does it mean to have a “disability” in the music classroom? Is it possible that disability is not as clear-cut as it may seem? These are easy questions for educators to overlook because we are busy with the time-consuming tasks of devising curricula and instructing students with and without special needs. They are, however, important questions if we want to provide a high-quality education to all students. Advocating for students, regardless of their abilities, so all have access to a high-quality music education can make a huge difference, both for individuals and for the class as a whole. It’s up to you!
education that both honors and meets the needs of students who require special education services.

**Disability Rights: A Background**

In the last quarter of the twentieth century, individuals with disabilities in the United States gained some key rights with the passage of federal laws. The civil rights movements of the 1960s secured equal treatment for individuals regardless of their race. In the 1970s, disability-rights advocates lobbied to extend those laws to individuals with disabilities. For example, in 1973, Congress passed the Rehabilitation Act, which required that any entity receiving federal funds could not discriminate on the basis of disability. The passage of the Americans with Disabilities Act (ADA) in 1990 and its amendment in 2008 provided equal opportunities and access to employment, government programs, public spaces, and transportation.

Congress also passed laws on education. The Education of All Handicapped Children Act of 1975 (EHA) required that schools provide a free, appropriate public education that allowed the maximum possible opportunity to interact with students without disabilities. In addition, EHA stipulated that separate schooling may occur only when the nature or the severity of the disability is such that instructional goals cannot be achieved in the regular classroom. In 1976, an amendment to the Higher Education Act of 1972 extended these services to students with physical disabilities entering college. Congress reauthorized EHA in 1990 and renamed it the Individuals with Disabilities Education Act (IDEA). This act expanded EHA’s definition of disability to include more students who would qualify under the law. EHA and IDEA also established the “Individualized Educational Program” (IEP), which required schools to create a document for each student with a disability that planned a course of action to meet that student’s unique educational needs.

These laws have had positive effects on the actions of society, schools, teachers, and students. It has led to a larger movement of “inclusion,” where individuals with disabilities were afforded greater rights and integration into society. For schools, this means that teachers now face a wider range of learners and a greater responsibility to diversify their instruction. In music, teachers must modify instruments, devise alternative ways of instructing, and alter rehearsal schedules and lesson plans. However, with this added responsibility comes a richer experience for all students, because the increased diversity of learners has positive effects on their cognitive and social development by promoting empathy and accepting differences.

**Medical versus Social Models of Disability**

Disability-rights advocates argue that while these laws are important and necessary, alone, they are insufficient. In addition, they believe it important to question the social stigmas and “unofficial” barriers that sometimes inhibit individuals from becoming full members of society. That is why in recent years, they have also focused on how disability labels can create an inferior status for those with disabilities. While state and federal laws have specific definitions that educators must legally follow when creating IEPs and services for students, looking at disability’s taken-for-granted definition can show other subtle ways discrimination persists. As educators become aware of this subtle discrimination, they can appropriately modify their teaching to better meet the needs of their students.

Some disability-rights advocates argue that disabilities are most commonly defined medically—as abnormal physical or mental conditions that limit individuals. These limiting conditions are considered ailments that require rehabilitation, such as physical therapy, medicine, surgery, or other correction. For example, “legal blindness” is medically defined as a person whose best-corrected vision is 20/200 or lower. In this definition, the disability is considered a problem with the eyes. On this basis, there is an attempt to rehabilitate this condition through corrections, like glasses, surgery, or other physical therapy that may improve vision. This definition also holds true for learning and emotional disabilities, which on the surface appear to be of the mind instead of the body. But diagnoses like autism, attention-deficit/hyperactivity disorder, dyslexia, and oppositional defiance are defined medically by attributing them to neurological abnormalities or what are called pathologies. These, too, must be rehabilitated through medical means and/or special education.

This definition, which is referred to as the medical model of disability, probably seems familiar and commonsensical. The medical model serves as the cornerstone for laws and special education in the United States and other industrialized countries and helps individuals with disabilities receive the help they need to improve their quality of life. But some disability-rights advocates argue that the medical model fails to capture an equally important part of possessing a disability: what it feels like to “be disabled” in society today. Therefore, rather than use a medical descriptor, they prefer to use what they call a social model of disability, which defines disability not as a limitation of the body or mind but as a social position.

To show the difference between disability as a medical condition and disability as a social position, some scholars make a distinction between an impairment and a disability. In his book *Bending over Backwards*, Lennard J. Davis writes, Impairment is the physical fact of lacking an arm or a leg. Disability is the social process that turns an impairment into a negative by creating barriers to access. An impairment involves a loss or diminution of sight, hearing, mobility, mental ability, and so on. But an impairment only becomes a disability when society creates environments with barriers—affectionate, sensory, cognitive, or architectural.

Architectural design is the clearest example of Davis’s idea. If someone must use a wheelchair, that person’s legs are impaired. When ramps are installed
students with impairments can easily be played with one hand. Many percussion and brass instruments may be played in ingenious ways. Some companies produce recorders that can be played with one hand or by players with fewer than ten fingers. In addition, traditional instruments may be played in ingenious ways. Many percussion and brass instruments can easily be played with one hand. Even violins can be manipulated so that people with the use of one arm can play them.

Finally, new repertoire can be written. For example, a diverse repertoire for one-hand piano exists, ranging from pedagogical pieces for beginners to concertos, like Maurice Ravel’s Concerto for the Left Hand in D major. Figure 1 lists some resources for teachers to research repertoire and instrument and technique modifications. By attending to these issues, teachers find that the instrument no longer disables some students from enjoying performance.

In addition to modifying instruments, teachers can begin to ask if there are unnecessary boundaries in their teaching that can turn a student’s instrument into a disability. For example, in his dissertation, Frederick W. Moss Jr. documented that students with visual impairments were disqualified from auditioning for all-district and all-state ensembles because they could not complete the sight-reading portion of the audition. Moss’s example makes us realize something that is easily overlooked: a musician must have sufficient “sight” in order to sight-read. And while most teachers would agree that sight-reading is an important skill for students with vision to cultivate, if teachers rigidly enforce these rules, they can turn a student’s visual impairment into a disability.

Like instruments, teachers can modify their instruction in notation to accommodate students with disabilities. Students with visual impairments could learn the basic functions of notation by providing them with music braille. And although music braille is unlike standard notation because it proves to be too cumbersome to immediately read on the spot or sight-read, it allows students to experience notation. Teachers can register for a free online course to learn the basics of braille notation at http://www.brl.org/index.html and can download free software to translate standard notation into braille at http://delysid.org/freedots.html.

Because music braille requires specific knowledge and materials, it may prove infeasible for some teachers to implement. But teachers can still modify the curriculum in other ways. They can provide students recordings so that they can learn and practice the music at home. Teachers should provide recordings of the student’s individual part as well as of the entire ensemble so the student can understand how his or her part fits into the whole. Moss notes that it is important for the teacher to “talk through” the piece

### FIGURE 1

**Resources for Educators Seeking to Adapt Musical Instruments and Make Other Accommodations for Students**

<table>
<thead>
<tr>
<th>Resources for Adapting Musical Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One-hand piano repertoire:</strong></td>
</tr>
<tr>
<td>- <a href="http://pianoeducation.org/pnoonhnd.html">http://pianoeducation.org/pnoonhnd.html</a></td>
</tr>
<tr>
<td><strong>Modified instruments:</strong></td>
</tr>
<tr>
<td>- <a href="http://www.dolmetsch.com/goldseriesrecorders.htm">http://www.dolmetsch.com/goldseriesrecorders.htm</a> (Recorder)</td>
</tr>
<tr>
<td>- <a href="http://onehandwinds.unk.edu/toggle_key.htm">http://onehandwinds.unk.edu/toggle_key.htm</a> (Saxophone)</td>
</tr>
<tr>
<td><strong>General resources on choosing and modifying instruments:</strong></td>
</tr>
<tr>
<td>- <a href="http://www.livingmysong.org.uk/choosinginstruments.htm">http://www.livingmysong.org.uk/choosinginstruments.htm</a></td>
</tr>
</tbody>
</table>
on the recording to provide information, like the key and meter of the piece, and to explain where markings, such as accents or dynamics, are indicated. Also, directors can teach a composition by rote to the entire ensemble, including students with typical sight. This allows all students to develop their aural skills in new ways, rather than too heavily relying on their eyes. It also provides an opportunity for students with typical sight to learn music with a process that is somewhat akin to the ways their peers with visual impairments experience music. This can help all students appreciate the unique strengths of musicians with visual impairments.

Finally, the social model of disability even applies to students who have learning disabilities and behavioral and emotional disorders. The social model of disability suggests that these students think about and process information and music differently than students without disabilities. Students with behavioral disorders, for example, typically have average intelligence, but because they act and think differently than students without disabilities, they are more likely to drop out of school. The social model also suggests that a teacher who does not adapt his or her instruction to those students’ unique behaviors and thinking creates “barriers to access.” And while providing accommodations for students with behavioral disorders may be challenging, music teachers can offer a successful experience for these students by giving clear, simple, unambiguous directions; using consistent classroom management; and wording directions positively. Music educators and therapists Mary S. Adamek and Alice-Ann Darrow, for example, say, “Asking students to do something is a more positive approach than telling them don’t do something—’Watch me’ instead of ‘Don’t bury your head in the music.’” Similarly, music educators Alice M. Hammel and Ryan M. Hourigan suggest that for students with learning disabilities, teachers can make accommodations by attending to the modality, pacing, size, and color of the instruction and materials. They recommend that teachers use all modes—kineesthetic, visual, aural, tactile, and so on—when introducing new material, slow instruction down, enlarge music and other materials, and use different colors to help students process information.

Disability and Language

But while music teachers can modify materials and instruction, the transformation of an impairment into a disability is sometimes more subtle. Language can also disable. For example, think of the negative connotations that blind has in our language, like in blind leading the blind and blind rage. Then, think of the positive connotation light and vision have, like in enlightening and insight. This shows not only the physical barriers that individuals with visual impairments must deal with but also the subtle discrimination they might meet every day in their interactions with others, even when it is not people’s intention to be discriminatory. Because of this, some disability-rights advocates also question how people with disabilities are addressed and described. They suggest that we use what is called people-first language. This means, in the construction of a sentence, the person comes before the label. For example, they favor child with epilepsy instead of epileptic child. Although this might appear to be a wordy game of political correctness that makes little difference, language has both subtle and profound effects on our thinking. Disability-first language, as in “That autistic child plays the trumpet,” puts emphasis on the disability by placing it first in the sentence. On the other hand, “That student plays the trumpet” stresses that the individual is a person first and foremost, who also has a condition. Ordering the sentence in this way, they argue, honors the whole individual and deemphasizes the disability. In fact, a label may not be needed at all. Think of the child’s viewpoint. Why not simply, “That student plays the trumpet”? Figure 2

<table>
<thead>
<tr>
<th>People-First Language</th>
<th>Say or write . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>He is disabled.</td>
<td>He/she is a person with a disability.</td>
</tr>
<tr>
<td>She is handicapped.</td>
<td></td>
</tr>
<tr>
<td>They are abnormal.</td>
<td></td>
</tr>
<tr>
<td>He is special ed.</td>
<td>She receives special education or special services.</td>
</tr>
<tr>
<td>She is mentally retarded.</td>
<td>She has an intellectual disability.</td>
</tr>
<tr>
<td>He’s autistic.</td>
<td>He has autism.</td>
</tr>
<tr>
<td>She is a normal kid.</td>
<td>She’s a typical child.</td>
</tr>
<tr>
<td>He is crippled.</td>
<td>He has a physical disability.</td>
</tr>
<tr>
<td>She is confined to a wheelchair.</td>
<td>She uses a wheelchair.</td>
</tr>
<tr>
<td>He is Downs or Mongoloid.</td>
<td>He has Down syndrome.</td>
</tr>
<tr>
<td>She is blind.</td>
<td>She has a visual impairment.</td>
</tr>
<tr>
<td>He is deaf.</td>
<td>He has a hearing impairment.</td>
</tr>
<tr>
<td>She is emotionally disturbed.</td>
<td>She has an emotional disability.</td>
</tr>
<tr>
<td>He is epileptic.</td>
<td>He has epilepsy.</td>
</tr>
</tbody>
</table>

Where possible, ask if a label is necessary. Remember: Ability first!
describes some common language that should be avoided and their acceptable person-first-language substitutions.

Not all disability-rights advocates, however, are proponents of this language. Some suggest that people-first language may actually further stigmatize disabilities. A tall person, for example, is not referred to as “a person with tallness.” Using the wordy, awkward sentence structure, they argue, only calls more attention to disabilities. That is why in the United States, for example, the National Federation for the Blind officially accepts blind person as more acceptable than person with blindness. Also, some disability-rights advocates in the United Kingdom prefer non-person-first language, like disabled person, because they believe person-first language de-emphasizes the idea that disability is a social position.

Despite the debate, teachers should be aware of how language is used in and outside the classroom because many people, especially the students themselves, find disability-first language offensive. To be sensitive to these issues, educators should carefully consider their language when talking to students and to their parents, guardians, and advocates and when completing official paperwork. To do this, teachers of students with disabilities need to find out if all parties have opinions on how they should speak about the child’s disability. Of course, it’s important to be compassionate, but everyone involved needs to become aware of current law. For example, in October 2010, Rosa’s Law (S. 2781) transformed American legal usage, striking “mental retardation” from acceptable language in federal documents.

It is also helpful to “audit” your curriculum and teaching. Are there any materials, like textbooks, worksheets, recordings, or other resources that you currently use, that contain potentially offensive language? Making sure there is appropriate language in the classroom can make students with disabilities more comfortable and can set a good model for all students to use respectful language.

What Else Can I Do?

When working with students with special needs, it is important to follow not only the letter of the law but also the spirit. Merely fulfilling the modifications in a student’s IEP, for example, alone is not enough. It is also important to strive toward the ideals of these laws by providing an education that also honors
### FIGURE 3
Some Supplementary Resources, Including Websites

<table>
<thead>
<tr>
<th>Additional Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Special Education Law:</strong></td>
</tr>
<tr>
<td><strong>Arts Education:</strong></td>
</tr>
<tr>
<td><strong>The Social Model of Disability and Music:</strong></td>
</tr>
<tr>
<td><strong>The Social Model of Disability and Education:</strong></td>
</tr>
<tr>
<td><strong>General Resources on Special Education in Music:</strong></td>
</tr>
<tr>
<td><strong>Music Education Resources on Particular Disabilities:</strong></td>
</tr>
</tbody>
</table>
and supports students and their navigation of the school and outside world. This means that teachers not only “comply” with law but also continually look for ways to make their instruction more inclusive. Viewing disabilities from the social model perspective allows teachers to approach this task in new ways by looking at disability and impairment as separate. This shifts the responsibility from the students and their physical impairments to the educational environment that might inhibit the students from reaching their full potentials. Figure 3 provides some general resources that teachers can reference to help continue this journey of making their classrooms inclusive to all students. And regardless of their abilities and disabilities, students deserve thoughtful music educators willing to make these changes in the name of what is fair, right, and just.

Notes


6. Ibid.


8. For more information on this system, see the maker’s website, http://www.dolmetsch.com/goldseriesrecorders.htm. For more information on this system, see the maker’s website, http://www.dolmetsch.com/goldseriesrecorders.htm.


10. For video of a violinist playing with the use of one arm, see http://www.youtube.com/watch?v=SYmqCSXznEw&list=FLvCPlk6_h6gm6bQZZajplcQ&index=4.


15. Ibid., 147.


Strategies for Working with Children with Cochlear Implants
Lyn Schraer-Joiner and Manuela Prause-Weber
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>> Version of Record - Sep 11, 2009
What is This?
Strategies for Working with Children with Cochlear Implants

Is there a student in your music class who uses a prosthetic device to better help them to perceive sound? The techniques described here might assist both of you.

According to the National Institute on Deafness and Other Communication Disorders, 23,000 individuals in the United States, including 10,000 children, have a cochlear implant. This biomedical electronic device has been a breakthrough in the auditory rehabilitation of individuals diagnosed with severe or profound sensorineural hearing losses who are unable to hear and/or comprehend speech with conventional hearing aids. While the cochlear implant can convey a sense of sound to individuals with hearing loss, it is not a cure.

Cochlear implants differ from hearing aids, which only amplify sound. The cochlear implant converts incoming sound signals into electrical impulses that directly stimulate the remaining auditory nerve fibers in the inner ear. All cochlear implants are comprised of a receiver (shown in Figure 1) placed subcutaneously behind the ear and three external components, specifically, the transmitter system, the microphone, and the speech processor (shown in Figure 2). The acoustical signals gathered by the microphone are electrically transduced, traveling via cable to the speech processor. These signals are transformed into electrical impulses that travel back to the transmitter. The signals are then sent through the skin via radio waves to the receiver and subsequently to the electrodes implanted within the cochlea of the inner ear. The electrical discharge of the auditory neurons advancing through the central auditory system to the auditory cortex are then interpreted as meaningful sound. An implanted cochlear prosthesis is shown in Figure 3.

Because of advances in cochlear implant technology, music educators will see more children with cochlear implants in their classrooms. As a result, many will require support and guidance to adequately meet the specific aural and communicative needs of these students. Educator Kimberly McCord’s research involving collaboration between deaf education and music education students revealed a series of strategies for working with deaf students, including those with cochlear implants. According to McCord, music education students reported feeling anxious and unsure of how to teach these students. Following their semester-long collaboration with deaf educators, the music education students felt empowered and secure, sharing also their observations that the deaf students valued music and were capable of participating in classes and ensembles. With the appropriate resources and strategies for the inclusion of deaf and hard-of-hearing students, teachers can enhance the education received by all of the children in their music classroom.

All children, regardless of background and ability, should experience the different facets of their musical heritage and have opportunities to develop their aural, artistic, expressive, and musical sensibilities. Musi-
cal activity can promote both acceptance and understanding. It can eliminate social barriers and help to diminish the misconceptions and fear often associated with impairments or disabilities. The following recommendations reach across all backgrounds and abilities.

**General Considerations**

Appraising topics from a multisensory perspective can enhance student participation in musical activities. Vibrotactile cues, defined for the purposes of this article as sensory triggers that indicate an impending activity or event in the context of an activity, can be provided by instruments such as xylophones, marimbas, or drums. Teachers may also consider placing stereo speakers on the floor. In such situations, children can either sit on the floor in close but safe proximity to the stereo system or in their chairs with their shoes off so that they can feel the vibrations. If this is not possible, the gymnasium or cafeteria floor are alternatives. Visual aids, such as sequencing cards and music with enlarged print, can help to reinforce the concepts introduced and ensure that the child is able to follow the lesson. Additionally, manipulatives, such as foam stickers, felt notation cards, colorful scarves, or Popsicle sticks—which are useful for building rhythms and can provide further opportunities for hands-on learning.

Manual communication can greatly enhance music instruction for all. Manual communication refers to physical messages received by the eyes. Such messages, produced by the hands, arms, and face, for example, can be presented via body gesture, finger spelling, and sign. Manual communication modes include song-signing, an art form originating from the deaf community in which one or more children sign while singing or sign while listening to music. Such an
approach will reinforce music concepts both visually and kinesthetically and will promote a greater appreciation for this form of communication.

Several studies have revealed that using visual cues in music activities increases the success of cochlear-implanted children. Visual prompts and models may also help to reinforce both movement and instrumental activities. Furthermore, seating the cochlear-implanted child at either the front or side of the demonstration area will ensure that he or she has a clear view of the activity and is able to speech-read (formerly called lip reading). Lessons presented in a clear and concise manner will also ensure the integrity of prosodic speech elements such as rhythm and melody.

Information about the cochlear-implanted child’s social characteristics and background can be beneficial for the music teacher’s instructional planning. For instance, if the cochlear-implanted student is socialized within deaf culture or has a bilingual background, he or she may be familiar with manual communication. Therefore, emphasis in the music classroom can be placed on such musical art forms as sign-interpreted musical performances and song signing. If the child has experienced a strictly aural-oral environment and has never been exposed to manual communication, music activities involving song-signing need not be as emphasized.

Familiarity is fundamental. Children with cochlear implants are constantly grappling to orient themselves in their auditory surroundings. By maintaining predictable class structures and routines, the music educator can reduce “hearing-stress situations” the cochlear-implanted child faces daily when interacting with others. This approach will ensure a safe, familiar, and dependable learning environment for all children in the music classroom.

Special Musical Considerations

Children implanted with the cochlear prosthesis can perceive musical elements. The assumption is often made that musical enjoyment and the development of music skills are impossibilities for hard-of-hearing/deaf students. Rhythm, pitch, harmony, and timbre are all viable topics.
Additionally, research has revealed that the cochlear implant does not hinder the user from the perception of these musical elements. Music educators should be aware that the child may at first have difficulty with multiple element focuses. Depending upon the cochlear-implanted child’s experience and success with the implant, the music teacher may want to consider having the child focus on one element during a listening activity. Single elements can be reinforced and enhanced with listening maps as well as movement activities that emphasize the element. For example, specified arm movements may be used to represent either the melodic or the harmonic line. Body rhythms can be implemented to symbolize rhythmic structure. For example, standing up straight with legs together and hands held firmly to the sides of the body can represent a single quarter note, while hands placed on bent knees with legs spread apart may represent two eighth notes. A whole-part-whole approach can be used during a listening lesson. For instance, the music teacher might consider introducing the entire piece first, followed by an emphasis on individual musical elements for more in-depth study, and conclude with a reiteration of the entire piece. Such an approach would be beneficial for the entire class and particularly helpful to the child who is developing his or her listening skills with the device.

Music activities reinforcing the levels of auditory development can help all students to develop their listening and communication skills. The levels of auditory development can be modified to align with music objectives in the following manner:

1. Detection: The ability to respond to the presence or absence of rhythmic and melodic stimuli. “Stop and Go” is an example. During this activity, students move when they hear the music and stop when the music stops.
2. Discrimination: The ability to perceive similarities and differences between two or more rhythmic and melodic patterns. Activities can be expanded to include various dynamic levels, tempos, and timbres. In this instance, teachers can present students with two different rhythm patterns and/or two different pitch patterns, timbres, dynamics, or tempos. Students are then asked to respond regarding the similarities and differences of the structural patterns or timbres. Eventually, patterns can be student composed and performed.
3. Identification: The ability to acknowledge verbally rhythmic and melodic stimuli. For instance, in listening to specific children’s songs, students might be asked to identify particular elemental attributes, such as the rhythm patterns employed or the direction of the melodic line. Students may also describe, using accurate terminology, the dynamics, tempos, and timbres perceived.
4. Comprehension: The ability to demonstrate understanding of the rhythmic and melodic elements perceived in a listening exercise or melody. This level is an extension of level 3, identification. Instead of focusing on one musical element, students would be asked to identify and describe all of the elements they have perceived. For instance, if using Prokofiev’s Peter and the Wolf, the teacher might consider first aiding the children with their identification of the violin and its relationship to Peter, and subsequently relating the clarinet to the cat, and the bassoon to the grandfather, and so on. At first, this might be reinforced visually with pictures of both the instruments and the animals. Kinesthetic reinforcement may include movements representing each character as well as movements with the music as the story is being told. Further study at this level might entail a more in-depth examination of the music, specifically, the rhythms, pitch patterns, dynamics, and articulations that help to portray the individual characters, such as the staccato articulations in the flute part that help convey the bird’s whistle or the punctuated rhythm and melodic lines that reflect Peter’s walk through the woods.

The cochlear-implanted child may not have an Individualized Education Program (IEP). This may be the decision of a parent whose child’s implant surgery and subsequent habilitation were successful. In this instance, the music educator should converse with the child’s other teachers, in addition to the school nurse, to determine whether the district has been informed by the child’s parents. Music teachers should also feel comfortable contacting the parents directly so they can answer questions about their child’s cochlear implant. Of particular interest to music teachers are the child’s spectral capacities—frequencies available to the child with his or her implant system. Such information will enable teachers to safely and successfully accommodate the child in the music classroom.

If the cochlear-implanted child does have an IEP, the music teacher should review their audiogram (a visual representation of hearing sensitivity at various frequencies) as well as the child’s spectral capacities with the implant. Any questions or concerns may also be directed to the school’s audiologist, speech-language pathologist, or school nurse. The music teacher may also want to consider contacting the child’s other teachers to find out about the instructional modifications implemented in those classes for the purposes of consistency.

The music teacher may want to conduct a musical audiogram to understand and meet the cochlear-implanted student’s spectral capabilities. To administer a musical audiogram, the music teacher should first select one melodic phrase from a children’s songbook—specifically, one that the child is familiar with. Second, the teacher should inform the child that the tune will be performed in three different ways, each in a different register and at a different dynamic level. The child should indicate which example sounded the best or was the most comfortable to listen to. This activity will provide the teacher with some initial information about which tones and dynamic ranges are most comfortable for the child.
A Music Educator’s Guide to the Cochlear Implant

Music teachers should be acquainted with the functional aspects of the cochlear implant, including support materials and resources. Such information will not only influence teaching approaches employed by music educators but also aid them in successfully including cochlear-implanted students in their music classes.

Resources

To address the needs of both the public-school teacher and the young cochlear implant user, various manufacturers of the device have developed special troubleshooting manuals. Examples include Advanced Bionics’ Tools for Schools Helping Children with Cochlear Implants Succeed in the Classroom (Advanced Bionics Corporation, http://www.bionicear.com), Med-El’s Handbook for Educators: Teaching Children Who Listen with a Cochlear Implant (Med-El Corporation, http://www.medel.com), and Cochlear Americas’s The Nucleus Troubleshooting Kit for Educators (Cochlear Americas, http://www.cochlearamericas.com). The primary purpose of these manuals is to aid educators in both recognizing and attending to problems that may arise with the hearing aids, has revealed that familiarity and repetitious listening are key. Simple, short, repetitive songs and rhythm activities incorporating instruments have been the most successful. Such recommendations are substantiated by researchers Kate Gfeller, Shelley Witt, Linda Spencer, Julie Stordahl, and Bruce Tomblin.

Children’s Musical Experiences

Data from Schraer-Joiner and Prause-Weber’s experiential research with children who are hard-of-hearing/deaf, either implanted with a cochlear prosthesis or fitted with hearing aids, has revealed that familiarity and repetitions are key. Simple, short, repetitive songs and rhythm activities incorporating instruments have been the most successful. Such recommendations are substantiated by researchers Kate Gfeller, Shelley Witt, Linda Spencer, Julie Stordahl, and Bruce Tomblin.

Some Final Thoughts

As educators, it is our responsibility to educate all our students, providing them with chances to explore, experience, and create music. Children with cochlear implants can be successfully included in music class, especially if the activities take into consideration their unique needs. The most important finding of our research has been that music listening experiences can be both educational and pleasurable for the cochlear implant user even if his or her perception of music differs from that of typical-hearing or aided individuals.

Notes


Recordings emphasizing large ensembles may extend beyond the capacity of the modern cochlear implant system. Compositions for large ensembles, such as orchestras or bands, may be more difficult for the child implanted with the cochlear prosthesis to perceive, as such pieces extend beyond the receptive capacity of modern cochlear implant systems. This is because the activated electrodes, located along the electrode array inserted into the cochlea, are related to a specific frequency field. When too many frequencies are produced by one electrode, sound clusters result that make perception of music with the implant difficult. Ultimately, music consisting of single instruments or chamber music will provide optimum listening opportunities for the cochlear-implanted child.

In instances when a particular listening lesson or activity emphasizes a larger work, the music teacher might consider giving the cochlear-implanted child a musical heads-up to help him or her prepare for that lesson. Providing the child with a recording ahead of time may be very helpful. Depending on the child’s experience with the implant, a modified version of the piece emphasizing the main melody would be optimal. Listening maps can also help the cochlear-implanted child to follow the listening example.

The spectral capacities of the cochlear implant should be considered when planning music lessons. Research has indicated not only that children implanted with the cochlear prosthesis participate in both group and individual vocal activities, including classroom singing and choir, but that they enjoy these experiences as well.23 Pitch perception, for the cochlear implant user, depends on the placement of the electrode carrier. This placement differs slightly for each individual. Therefore, the tone perceived by the cochlear implant user differs from the actual tone.

Research has also revealed that cochlear-implanted children can successfully recognize familiar songs when words of the songs are provided but show little recognition when no words are provided, such as with piano accompaniment only.24 Song reviews can therefore be very helpful to the cochlear-implanted child. Reinforcing song lyrics via song-signing is one way that this can be done. Such an activity can be both pleasurable and educational for children with cochlear implants as well as for their typical-hearing peers.25

Although the child may not match pitch perfectly, singing activities should not be avoided. Providing singing opportunities can aid in refining children’s pitch discrimination skills as well as their ability to recognize and produce vow-

**Additional Resources**

els. Because the frequency range of the cochlear implant does not expand beyond that of an octave and a third, the music educator will need to carefully consider the cochlear-implanted child when planning singing activities. The findings of the aforementioned musical audiogram in conjunction with the child's spectral capacity will be particularly helpful in this instance. A musical heads-up would also be appropriate for this lesson, as research has revealed that repetition and familiarity are key components to the musical success of children implanted with the cochlear prosthesis. Some recommendations for the music teacher include providing the cochlear-implanted child with a recording of the song before the lesson. Recordings emphasizing men's and women's voices are optimal.28 The latter can be particularly reinforcing, since songs sung in lower registers will be easier for the cochlear-implanted child to perceive.

During the lesson, the music teacher should consider surrounding the child with good vocal models. Also suggested is simplifying vocal parts so that the child can participate. If the child cannot partake in a planned singing activity, the music teacher might add an instrumental accompaniment for them to perform.

Careful consideration should also be given when assigning instrument parts for a music activity. In general, instruments with clear, short sounds, such as the xylophone, will be easier for the cochlear-implanted child to perceive. Instruments such as the gong and metallophone have a broader frequency field (include many harmonics). As a result, these instruments may be difficult for the cochlear-implanted child to play. Therefore, the music teacher may want to consider assigning another part to play, such as the xylophone, drum, rattle, or jingle bells.

The external components (microphone and speech processor) of the implant system should be monitored during music lessons. Activities emphasizing movement and/or dance are of particular concern. In such instances, children should, if comfortable, remove the external components. Children who feel uneasy about doing so should be carefully monitored throughout

the activity. An alternate activity or modified movements can be planned for the child as a precaution. If the microphone is dislodged from the magnet that holds it in place, in most cases, the child will be able to replace it without assistance.

When listening activities are planned for a music lesson, the music teacher should remind the cochlear-implanted child that they may need to adjust his or her volume control. A quiet reminder at the beginning of class will serve as a preventative measure against any difficulties the child may experience, subsequently ensuring his or her comfort level.

Music for All

Music can be attainable by all children if given the opportunity. The child implanted with the cochlear prosthesis, like any hard-of-hearing or deaf child, is constantly faced with numerous auditory demands and auditory learning, often resulting in “hearing stress.” Musical involvement will offer the cochlear-implanted child the same opportunities for musical learning as their typical-hearing peers and will provide sensory experiences that are both pleasurable and educational. Music teachers responsible for educating a child with a cochlear prosthesis should consider adapting lessons to meet the special needs and aural demands of the student. The recommendations offered here can serve as a foundation for music educators in providing pleasurable musical experiences for many children with this hearing prosthesis.

Notes

4. Ibid.
6. Ibid.
7. Ibid.
9. Ibid.
12. Mary Adamek and Alice-Ann Darrow, Music in Special Education (Silver Spring, MD: American Music Therapy Association, 2005); and Darrow, “The Arts of Sign and Song.”


21. Ibid.

22. Prause, “Annaeherung an ein Musikerleben.”


25. Darrow, “The Arts of Sign and Song.”

Teaching Music to Children with Autism: Understandings and Perspectives

According to the National Centers for Disease Control, 1 out of 150 children in the United States is diagnosed with autism. Diagnosis rates are rising by 10 to 17 percent per year. Due to this increase, more children with autism have been included in music classrooms. As a music educator and a music therapist, respectively, we have witnessed an increasing number of music teachers being asked to teach music to self-contained autism classrooms. Music teachers are often asked to do this without support or training.

When presented with the challenge of teaching a child with autism, music teachers are faced with many uncertainties and can be confused. Researchers Ruth Aspy and Barry Grossman state, “The diagnosis of autism spectrum disorders presents a maze of questions that can be perplexing for parents and educators.” The purpose of this article is to offer an overview of autism spectrum disorder. We offer strategies in the areas of communication and behavior as they relate to the music classroom. In addition, we address potential sensory, emotional, and social concerns that may affect music students with autism. This information is derived from current research on the education of children with autism, music therapy research, best practice (from the coauthors’ work providing music therapy to children with autism), and current music education projects with children with autism in music education programs.

What Is Autism?

“Autism is a complex developmental disability that typically appears during the first three years of life and is the result of a neurological disorder that affects the normal functioning of the brain.” Typically, symptoms begin to appear around eighteen months of age. They may include (1) communication delays, (2) repeating words or phrases, (3) unresponsiveness to verbal cues, (4) social difficulties, (5) oversensitivity (sound, light, etc.), (6) resistance to change, (7) lack of direct eye contact, (8) odd or unusual repetitive play, and (9) self-stimulation. Children may display some or all of these symptoms. However, it is important to understand that each child is an individual. Get to know the child through observation, contact with parents, and consultation with other teachers.

The Spectrum

Autism is one of five disorders that fall under the umbrella of pervasive development disorders. These disorders include (1) autistic disorder, (2) Asperger’s disorder, (3) childhood disintegrative disorder, (4) Rett’s disorder, and (5) pervasive developmental disorder not otherwise specified. You may hear professionals refer to persons as being “on the spectrum.” This refers to the idea that a child may fall on the spectrum of pervasive devel-
Children on the Spectrum and Music

Many music educators we have encountered in our work explain that the children they teach (who have autism) have an affinity or a talent for music. According to music therapist and researcher Michael Thaut, “Children on the autistic spectrum often have a remarkable capability and responsiveness to music as compared to most other areas of their behavior, as well as in comparison with typical children.”

We have seen children who cannot communicate verbally acquire skills in music that exceed their typical peers. The challenge for music teachers is discovering how to tap into this responsiveness in the midst of all of the other distractions that arise for the child. The first step is to establish a solid communication strategy between you and the child.

Communication Strategies

One of the characteristics of autism is severe disturbance in communication. In understanding this communication barrier, it is important to understand that children on the spectrum may comprehend much more than they can express verbally (or vice versa). There are many strategies therapists and educators use to aid a child to communicate. Visual aids have been used successfully in helping children with autism communicate. A picture system called PECS (Picture Exchange Communication System) allows teachers to make pictures with words to help students on the spectrum communicate (see Figure 1). Within this program, there are icons (including those for music) that can be used in the classroom. If your school district provides services for children on the spectrum, it will probably have the software that creates the PECS icons (Autism Resources sidebar). Consult your special education professional to assist you with PECS in your music classroom.

FIGURE 1
Examples of Picture Exchange Communication System (PECS) Icons

Note: Also consider using digital photos of people (friends, teachers), places (home, cafeteria, music class), or subjects (gym, music, etc.).

The Picture Communication Symbols © 1981–2008 by Mayer-Johnson LLC. Mayer-Johnson LLC, 2100 Wharton Street, Suite 400, Pittsburgh, PA 15203; 1-800-588-4548 (phone); 1-800-550-0449 (fax); e-mail: mayerj@mayer-johnson.com; Web site: www.mayer-johnson.com. All Rights Reserved Worldwide. Used with permission.
that you say. Some children who have limited verbal skills can get confused easily with wordy sentences and phrases. In addition, take advantage of nonverbal cues, such as gazes and hand gestures, to communicate. This will encourage a child on the spectrum to look to you and make eye contact for instructions.

Transitions between activities can also be a source of anxiety for children on the spectrum. We want to keep children busy so we tend to plan lots of small activities within our music classes. This can be a challenge for children on the spectrum. Again, anticipate these transitions by using verbal and nonverbal cues as well as visual representations (e.g., using PECS icons). Implementing these suggestions can help alleviate anxiety for a child on the spectrum. Again, finding time to practice these transitions or to have another child assist the student can be a great help to both the teacher and the student.

The above-mentioned communication tools can help reduce anxiety and help provide clearer messages between you and a child with autism. An effective way to acquire effective communication tools with a child on the spectrum is by consulting with the child’s team of teachers. This will allow you to explore which communication strategies are being used in all classes during the child’s day.

**Classroom Behavior**

Many educators have found that behavior can be an issue with students with autism. Due to the obstacles children with autism face, typical classroom behaviors, such as completing independent work, sitting for an extended time, or taking turns, can be a challenge for a child on the spectrum. A student on the spectrum may act out inappropriately, which creates a disruption for the rest of the children, which can cause a classroom management problem for the music teacher.

In addition, a child with autism may engage in echolalia. This is a behavior in which a phrase is constantly repeated. This form of self-stimulation can be a clue that the student may be escaping into his or her comfort zone. Again, this is an opportunity to help the student develop more classroom-appropriate responses. Attempt to reach him or her by engaging in a conversation about what is actually going on in your classroom. You may need to acknowledge the echolalia first (for example, if the student is repeating a phrase about airplanes, say something that makes sense within that framework), and then attempt to have a conversation about what is happening in the music classroom. Again, the more you get to know a student, the more you will find a way in to help the individual reengage in the present and extinguish the echolalic behavior. We have found that other teachers and families of the student in question are excellent resources in discovering such triggers.

We have also found that children on the spectrum may be sensitive to situations or environment. For example, a large, loud music room with lots of people may be the last place that a student on the spectrum wants to be. He or she may need to start class in the hallway (with supervision) and work his or her way into the room. He or she may need to wear noise-reducing headphones at first. Be aware of possible environmental triggers, such as (1) a bright room, (2) classroom setup, (3) loud noise, (4) strong smells, (5) different textures (the student’s chair, the carpet, an instrument, etc.), and (6) anything visually intriguing. In large groups, the setting itself may trigger disruptive behavior.

Children on the spectrum are often dealing with a range of issues that cause them to struggle with typical classroom behavior. You may wish to have the student come to your room so you can explain and practice classroom routines with them. This may include a very specific written description. You may need to write rules out on the board or on paper for the child. In addition, a reward system might need to be in place to reinforce these expectations (such as getting to play a special instrument or time on a computer). Check with the child’s classroom teacher to see if a reward system has already been put in place.

**Disruptive Behavior**

Disruptive behavior may hinder the learning of all of the students in your class at times. The key to understanding this behavior is to look at possible “triggers” that may be causing such a behavior. Researchers Kathy Gould and Cathy Pratt state, “When conducting a functional behavior assessment, professionals and family members examine setting events or triggers that may increase the probability of these behaviors.” Triggers may include (1) loud noises; (2) pain, illness, or discomfort (e.g., the student may not be able to verbally express his or her discomfort); (3) attention (e.g., the student may want your attention); and (4) environmental conditions (e.g., the child may be sensitive to something in your classroom). When disruptive behavior occurs, it is important for you to follow up with other team members (e.g., special education teachers, parents, etc.). They may have seen similar behaviors and be aware of the triggers that cause such disruption.

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**Resources on Autism**

- Autism Society of America: www.autism-society.org
- Autism Speaks: www.autism Speaks.org
- Boardmaker Software* (developed by Mayer-Johnson): www.mayer-johnson.com

*Consult your special education professionals concerning this resource.
### Classroom Music Example Using Picture Exchange Communication System (PECS)

- Arrange PECS icons on your chalkboard or dry-erase board in any order (e.g., an icon for warm-up, others for songs and activities for the day).
- Have the student with autism choose the order in which these activities will occur.
- As each activity is completed, take the icon down and put it in a “Complete” box or envelope.
- Allow all the students in the class, not just the student with autism, to take turns choosing the icons.
- **Rationale:** This provides the student with autism the opportunity to understand and anticipate schedule transitions.

### Modeling Appropriate Behavior

Classroom peers can both assist and model appropriate classroom behavior. Recruit classmates to assist with providing specific verbal cues (e.g., “Quiet mouth,” “Sit down please,” or “Good job!”). Positive relationships between your students often result from such a situation. It is surprising how well this can work. It also alleviates the stress of managing the classroom entirely on your own. Your student may also be capable of completing a self-evaluation, which will aid his or her understanding of rewards and consequences.

Simple social etiquette can be difficult for a child with autism. However, children on the spectrum still need to learn appropriate social behavior for them to be successful in school. Therefore, everyone who is in contact with a child on the spectrum can help by encouraging them to engage in suitable social behavior. For example, if you greet a child and he or she does not respond, attempt to make eye contact and wait until the student attempts to reciprocate with either eye contact or a verbal response. This is important practice for your student. This type of response can also be accessed musically. For example, when children are participating in a call-and-response song, such as a name song or a hello song, make every attempt to get a response. As mentioned earlier, a child with autism may prefer to be unresponsive. Even a response approximation (such as eye contact and a smile) should be considered a success in this case. You may find that eventually, with repetition, the child will become more engaged with you and more willing to participate.

### Performing with Autism

Some Ideas for Assisting Performers with Autism

#### Rehearsal Strategies (Band/Orchestra/Choir):

- Simplify your rehearsal language from the podium
- Practice rehearsal routines (e.g., where to sit, where to keep music, etc.) outside of class
- **Peer Assistance**
  - Have students help with equipment issues, music organization, and expectations
  - Have peer work with the student privately
- Provide music in other forms (e.g., recordings, smart music, etc.)
- Rescore parts (e.g., provide a reduced clarinet four-part written by the instructor)
- Visit concert venues prior to performance and practice performance routines

#### Resources to Consider


### Acquiring Music Skills

Children on the spectrum typically have unique processes by which they acquire and retain understanding and demonstrate knowledge. An important part of your consultation with other teachers, parents, and administrators is to uncover the learning processes used in other classes. Questions you want to ask may include the following: (1) Does he or she respond to visual or aural teaching? (2) Does routine comfort the child? (3) Are there sensitivities that may impede his or her learning (e.g., loud sound)? and (4) What is the current cognitive level of the child? Answers to these questions will give you a foundation from which to start your individualization or accommodation of instruction.

We have noticed that children on the spectrum who are high functioning, when in the moment of performing, seem to go through an extra layer of decoding instruction. They will seem to be behind; however, with repetition of concepts, they
tend to eventually catch up. Children with autism also may have difficulties with fine motor (small movement) or gross motor skill (large movement) that may present challenges. Again, consult with your student’s physical therapist or occupational therapists to gain insight into each child’s capabilities.

A behavior and musical understandings self-evaluation (completed by the students and the music teacher together) can help a child with autism truly understand his or her progress in music class. Take the time to list expectations and attach a daily grade for each criterion. These accommodations take time to show an effect. The routine of the classroom and your expectations may take a while to sink in. You may see progress in small steps. Again, a rewards system can often aid in allowing the student to understand his or her own progress and encourage him or her to further their study. Check in with the child’s classroom teacher and support staff. If an aide accompanies the child, make your expectations very clear as to what the aide should and should not do and invite the aide’s suggestions. If the child has a behavior checklist, whether provided by the classroom teacher or therapist or by you, the time you spend at the end of your class filling this out with the child is golden time for developing a working knowledge of and relationship with the child. If an aide is not available, a classroom buddy can perhaps be an escort back to the regular classroom.

Sensory Processing

Children with special needs can struggle with other related disabilities. One particular disorder that affects children diagnosed with autism is the neurological dysfunction known as sensory processing disorder (SPD). This disorder does not fall under the umbrella of pervasive development disorders. A healthy human sensory system processes sensory information from the world around us and provides us with a purposeful and adaptive response. This is typically an unconscious process. Simple motor skills, such as alternating our feet when climbing the stairs, holding out our hands when about to fall, or continually moving our feet when riding a tricycle, are all examples of an unconscious adaptive sensory response. For a child who struggles with SPD, these responses are not unconscious processes. Additionally, a child with SPD may avoid or seek specific sensory input. A child who is underresponsive may seek input through hand flapping, spinning in circles, chewing on inedible objects, or creating high-pitched noises. Conversely, a child who is overresponsive may be highly sensitive to noises, textures, foods, and bright rooms. To further complicate this matter, some children may avoid sensory input one day and seek it out the next. These difficulties can affect a child in your classroom in the following areas: (1) response time to cues, (2) attention, (3) refusal to participate (because of anxiety or overstimulation, etc.), (4) difficulty with movement activities, (5) appropriate focusing of attention, and (6) comprehension and retention of skills and knowledge.

Music teachers must be patient when children on the spectrum exhibit sensory needs. Most likely your students need time to adjust to their surroundings. They may already have strategies in place for when they become over- or understimulated. Since making music is a form of sensory input, it is important to understand your student and what causes him or her to struggle with sensory issues. Simple strategies, such as reducing the volume of music, slowing your teaching pace, allowing the student to go for a walk or take a break (accompanied by an aide), and more repetition, will enhance your success. Consult your special education team for suggestions.

Social Concerns

Another primary feature of autism is difficulty in the ability to relate to people, objects, and events. Children with autism tend to withdraw or be socially unresponsive. Music can be a perfect setting for children on the spectrum to strengthen their social skills and by default assist other students in your class to understand their classmate. Anything you can do to involve all of your students in aiding a classmate is a step in the right direction. This may include rotating a “helper” to assist in group activities that involve all of your students. We have observed the positive outcomes of this type of classroom. When asked to help with a classmate with special needs, children tend to take ownership of the learning community and shift some responsibility from the child’s aide or the music teacher.

Emotional Concerns

Children on the autistic spectrum often display emotional disturbances, ranging from inappropriate reactions to having no affect. These disturbances again can be a sign of stress due to communication difficulties, transitions, or sensitivities. Again, it is important to explore what the trigger might be. Oftentimes, a child on the spectrum has remembered an uncomfortable occurrence in your classroom.

Emotionally, transitions between activities can be difficult for children on the spectrum and can be a cause of high anxiety. Transitions can range from traveling from a child’s classroom to the music classroom to completing one activity and beginning another. As mentioned earlier, anything you can do to prepare a student may help alleviate some anxiety. Some tools to alleviate anxiety might include (1) playing recorded music during transitions, (2) providing verbal cues that one activity is almost done and describing what should be expected next, (3) providing a written schedule for your student, and (4) permitting the child time to adjust to what is coming next. Your pace might be too fast for his or her internal distractions. While you are teaching, a child on the spectrum may be trying to “organize” him- or herself in order to be able to just sit in your classroom. The student may have many sensory issues that are affecting him or her; may experience distractions, such as the leaves blowing in the trees or an instrument sitting on a shelf that had been used for a previous lesson that scared him or her; may be trying to figure out what the expression on your face means; and may be deciphering all of the words that are being said. All of these thoughts running around in his or her
head must settle down before the child is able to be comfortable and ready to try to learn a new concept—these may be some of the difficulties of children on the autistic spectrum in your classroom.

A Process toward Success

Our goal is to offer suggestions that will lead to more independence for the child in your music classroom. This includes allowing a child with autism the opportunity to establish classroom routines, appropriate behavior, communication, and the ability to acquire music skills and understandings. Autism is a complicated disorder. We encourage music teachers to gain further understanding by participating in the special education process and by obtaining a copy of each child’s Individualized Education Program document. A combination of being aware of cues and having a working relationship with the child’s educational team will result in a clearer understanding of your student. Once these understandings are established, it is hoped that they can be generalized to other areas in the student’s school day and, eventually, in his or her life.

NOTES

1. Based on prevalence statistics from the Centers for Disease Control and Prevention, 2007; see http://www.cdc.gov/ncbdd/autism/.


10. Ibid., 165.


13. Ibid., 27.


As special learners coordinator for the Illinois Music Educators Association, I received the following correspondence: “Our high school band director has done an outstanding job of integrating special education students into his band program. The students’ classroom teacher was wondering if there was any kind of certificate or award to be given to such a teacher. Would you please contact her with any information you might have on this subject?”

Unfortunately, we did not have an award. To honor the group, I wrote an article about their work for a local publication. After I visited the school, I decided there was much more to tell, so I pursued a case study, conducting extensive interviews and observations from November 2003 through April 2004. All of the quotations presented in this article came from these interviews. As a condition of the study, the names of the school and participants are not given here. The Class C high school of 243 students is in rural northern Illinois.

This article highlights the work of that instrumental music instructor, cooperating special education teacher, and a twenty-nine-member band. Although they could have chosen many paths, these two particular teachers adopted an inclusive attitude and found ways to integrate students with disabilities. Here is their story.

**Snapshot of the High School Band**

Amazingly, this concert band included an entire special education class: eight students with severe and profound developmental disabilities. Five other students, not in the special education class, had Individualized Education Programs (IEPs) to help them and the staff deal with learning disabilities. That means that thirteen of the twenty-nine musicians were receiving special education services. The group participated in concert band performances, competitions, solo and ensemble contests, non-competitive football halftime shows, and area parades. All students received private or small-group lessons during the school day.

In this school, students with learning disabilities attended one or two resource classes but were fully included in all other general education classes. In band, these students played various wind instruments. The eight students with severe disabilities from the special education class were in the percussion section, each having a different ability level. One read music and received private snare drum lessons. The remaining seven attended a group lesson and were able to recognize, discuss, and play repeated eighth, quarter, half, and whole notes. However, because of the complexity of high school literature, they did not read music in band. At the time of observation, this group of seven was just starting to read what they called “mixed-up” music—different combinations of note values.

The special education teacher attended all rehearsals, which the band director planned and led. The special education teacher assisted her students in the percussion section by encouraging them to change instruments quickly, keep instruments quiet when they were waiting to play, and find the proper instrument. More important, she used e-mail to provide the band director with adaptations for reading and written work, suggestions for teaching methods, or ideas of how to handle behaviors.

**Morphing into Integration**

The inclusive ensemble developed after a lunchtime conversation. The band director needed more
percussionists, and the special education teacher was looking for ways to integrate her students. It was not a formal, rigid process. In fact, when asked, the special education teacher couldn’t really recall the details and used the word “morphed” to describe the process. That is, the road to full inclusion was gradual and, in this situation, not imposed by the administration.

Five Signs of a Model Program

Existing research describes five signs of a model program that successfully includes students with disabilities: positive teacher attitudes, collaboration, curriculum modifications, accommodations, and peer tutors. I saw all these characteristics in the study school.

Teacher Attitudes. Researchers believe a positive attitude toward inclusion enables successful integration of students with disabilities in general classrooms. The band director in our case study had not always had a positive attitude. During a previous teaching position, he was frustrated by special learners in his ensemble—frustrated to the point of nearly leaving the profession. His attitude changed when a family member and parent of a child with developmental disabilities reminded him that you have to look at what a person with a disability can achieve. In addition, the band director’s previous position included time as a program assistant in a special education classroom. The band director also felt a personal connection to a family member with a disability, and that, in addition to his experiences in the special education classroom, proved useful in band.

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A student who can read rhythms but has trouble interpreting pitch may do well with a percussion instrument.
The result was a band director who actively sought out special learners for his ensemble. He stated his reasons for continuing the practice: “I need special-needs students in band. Without their emotion, the performance would seem less exciting. Without their consistent hard work, certain colors of the performance would be missing. Lastly, the joy of a smile would not be there. I enjoy the emotion brought to a performance by my special-needs students. It makes me feel good about what I am doing as a teacher.”

The special education teacher, who believed in the benefits of inclusion, reinforced the band director’s attitude. In her view, these benefits were academic (a music education), personal (self-esteem), and social (integration). Music successes boosted self-esteem. She believed that general students and students in special education all benefited from social interactions. In addition, she understood how the teaching practices used with special learners could help all learners. For these reasons, the special education teacher felt compelled to enroll the students in integrated activities.

Collaboration. Collaboration is universally recommended for successful inclusive programs. Many teachers believe that whenever they work with someone, they are collaborating. Actually, collaboration is the way people work together, not just their proximity. Collaborative schools practice interaction. The interaction occurs when school personnel and families confer, consult, and collaborate as a team to identify learning and behavioral needs, and to plan, implement, evaluate, and revise as needed the educational programs projected to carry out those needs. Teams can organize and meet, but just being in the same room does not guarantee that all members think their contributions are valued or that decision making is shared. Teachers might be assigned to work together, but unless they share their ideas, they might as well be working independently side by side.

In the case of the two teachers who wanted to include students with disabilities in the band, each brought expertise to the association. “Her input is fourteen-carat gold,” said the band director of the special education teacher. “She lets me know about behavior problems on any given day. She gives me input on how to handle a given situation to include instruction, assessment, or discipline.” He continued, “I depend on her to accommodate the written work, and she depends on me to accommodate the musical work. We discuss strategies for helping the students in various activities, and we meet in the middle on everything.”

The special education teacher described working with the band director in similar terms: “It’s a blessing. We’re friends who respect each other’s skills. We bounce ideas off each other, and between the two of us, we can create a lot of mischief!” She saw her job as the “delivery specialist,” while other educators played the part of “curriculum specialists.” To create an effective collaboration, they pooled their individual specialties.

When asked how they maintained inclusive practices, the special education teacher emphatically said, “Communication, communication, communication.” Her list of correspondents included parents, teachers, administrators, and students. Parents, for example, received daily correspondence in a communication notebook. Frequent sharing was the norm. In fact, the band director used the term “communication guru” to describe the special education teacher.

By now you might be wondering how they found the time to work together. These teachers used their time wisely by meeting only as needed. Often a quick pass in the hall or a stop before school was enough to do the job. For more involved discussions, the school’s technology system allowed them to e-mail frequently. They didn’t have to wait for a common planning period; instead, they could send messages when time allowed.

Teachers in this school made decisions that used a blend of ideas found in true collaborative relationships. They contributed in their areas of expertise with coordinated efforts to effectively use time and resources. Communication and respect were significant elements of their working relationship. These teachers were models of the collaborative process.

Curriculum Modifications. To effectively include students with disabilities, curricula are often modified to fit the ability level of the students. Naturally, assessment is key to matching the material to a student’s performance level. The band director in our case study was able to assess the ability levels of the students in previous general music classes and current band lessons. With their capabilities in mind, he selected appropriate instruments, altered percussion music, and chose suitable music.

Overall, the decision to place students with disabilities in the percussion section was based on their understanding of timing. The class could read rhythms necessary for percussion but had trouble interpreting pitch required for reading wind music. Therefore, the director placed them in the percussion section.

Assessment is key to matching the material to a student’s performance level.
When parts were too complex, the director altered parts. Figure 1 shows how he changed a difficult "and-a-three" rhythm to one with percussion directly on the beat. Even when rhythms were compromised, he believed the tone colors of the piece remained the same.

Altered music can be a problem at contests. This region allowed directors to alter parts for competition. Composers or arrangers need to write alternate or auxiliary parts for associations that do not allow deviations from the score. This band director had plans to write music for school bands with auxiliary percussion parts. I hope others follow his lead for instruments beyond the percussion section.

As other directors do, the band director in our case study chose literature with the ensemble's ability and curricular goals in mind. In an effort to push students to play more pitched percussion parts, he located a piece with bell and xylophone ostinatos. The aleatoric nature of the ostinatos allowed the students to memorize patterns while improving rhythms. The piece was a perfect way to introduce pitched percussion and stay within student ability levels.

Students in this school also were required to read and write in all classes. The band often read and answered questions about the composers of their band literature or the pieces themselves. The special education teacher altered written assignments for her students by changing vocabulary words. When other students were writing complex essays, students with disabilities would answer a less complex question. This special education teacher loved the challenge and often referred to content modifications as "solving a puzzle," as she simplified the work to fit their ability levels.

**Accommodations.** An accommodation is the use of an alternate instructional strategy that does not significantly change the difficulty level or the content of the curriculum.\(^7\) In other words, an accommodation changes how we teach, while modifications alter what we teach. Adjustments were common in the ensemble in this case study.

The first accommodation was to have both teachers in the rehearsal. Because her entire class participated in band, the special education teacher was able to attend with the students. Both teachers believed in trial and error, or "play as you go," when it came to teaching methods. Their approach—similar to the idea of locating a lost object in the last place you look—was to try methods until they found one that worked. In marching band, one of the students was having trouble staying in step. The special education teacher tried several prompts that didn't work, then finally came up with the idea of having the student watch the feet of the person in front of him. This easy solution fit the special education teacher's motto, "It isn't rocket science."

The band director commonly modeled how to play instruments. The students with severe disabilities stated, "We like it when he tells us, shows us, then lets us try." Because students didn't read music in band, the director modified or used more conducting cues than normal. For some students, he pointed for each cymbal strike. He changed one cue to signal a continuation of sound; starting with a common conducting point, he added a two-finger running motion to remind the student to repeatedly hit the instrument. An open hand that closed to a fist—similar to a cutoff motion but less subtle—signaled the stopping of a sound. On one song, the students were told to play eighth notes during a sustained triangle part. The director asked the students to play repeated quarter notes on a separate selection. In both cases, the written note lengths were performed from the verbal request. The educators found ways to reach all students.

**Peer Tutors.** Empowering students through the use of such techniques as peer teaching is an identified practice when inclusion functions at its best.\(^8\) The peer tutor acts as both teacher and classmate. The tutor mentors the student in music and age-appropriate social skills. In the case-study school, teachers actively recruited a gifted peer tutor for the percussion section. To their good fortune, students in this school could enroll in practicum teaching.
They asked a particular student, who had once participated in band and had also worked in the special education room as a practice teacher, if he would return to band for credit; he accepted. From the principal to the teachers to the students with disabilities, all praised the peer tutor’s abilities: “He is fun to watch.”

Sometimes this individual came up with ways to help students play parts correctly, and at other times he encouraged students to do their best. He often asked students if they were ready before a piece began. To remind students of their cues, he moved closer to two girls playing the triangle part, where he could smile and commend the girls for their work. When the director was too involved with conducting to give every entrance, the tutor would visually cue the students from the back of the band. On another occasion, the director told the bass drummer to stay with the beat by watching the tutor’s foot tap. Again, his large smile and verbal praise presented the drummer with feedback. Watching him, I was reminded of P.L. Sojourner’s words: “We are great, but we must be wary.”

Benefits

What are the benefits of inclusion? As stated earlier, the teachers saw musical and social gains from band inclusion. Students and parents also had much to say about the experience. The special education teacher believed the parents were overjoyed to see their children involved in “normal” activities. These parents had watched their children become segregated from society, she explained; when they had the chance to see them as a part of a “regular” group, they were amazed. The parents made the following comments about the students’ involvement in general activities:

PARENT A: In my opinion, it is wonderful. It is great to have interaction with other kids at higher levels, and they [students with disabilities] feel just as important as the others do… She [my daughter] loves being in band; she looks forward to it. She talks to me about the trips they go on. She is a senior this year, and she got flowers [at a senior night football game]. They announced the seniors this year, and she was really happy.

PARENT B: Yes, I remember that. She was ecstatic.

PARENT A: Yes, senior night was a big night for her.

PARENT B: Music is important for [my daughter], but it is also important that she is part of a group. My daughter did not have anyone to like her at her previous school. She was isolated and picked on by the other students. It’s so hard as a parent to see a child treated like that. After the visit to this school, she could not wait to go. She is up and ready early and does not miss a day. She loves it here—she loves everything about it. I can’t tell you what it means to see her participating in normal activities like everyone else.

The students in the program also saw benefits. Students with disabilities named favorite instruments, special songs, and musical events. Students without disabilities believed the added percussion parts were a benefit to the sound of the band. They were quite certain that the additional members improved their ensemble’s contest score. As an afterthought, one of the students said it was nice to have percussionists who were dependable. After some laughter, the group praised the students with disabilities for focus and responsibility. Another student stated that he didn’t see the value of inclusion when it began, but he concluded; “When you are forced to spend time with someone, you learn to understand the person.”

Another student said they were overjoyed with the opportunity in band to interact with persons with disabilities. Although the parties saw different payoffs, their end results were complementary. Students could learn about music while having social interactions with the general population. Both teachers concurred: there were benefits for all involved. Tutors learned by assisting others. Students improved from the help of tutors. One of the parents summarized the entire program as follows:

I believe the key to the success of this program is the extraordinary teachers involved. The special education teacher and the band director work so well together, with their main goal being the success of our children. They believe in the kids! They are proud of our kids and help them to be the very best they can be. They are patient and helpful. My son feels he is a crucial part of the band. He feels an obligation to be there for the concerts and games.

My son has made friendships with the general population that he would never have had if he hadn’t been in this class. I can’t tell you how many times we’ve been downtown and a band member has come over to talk to...
my son, or just passes by and says, “Hey, [name of child], how’s it going?” These are kids who would never have said that before if they hadn’t been in band together. I think it’s a chance for the band members to see just how great our kids are, too! We are so lucky to have two fantastic teachers making this band a success. They have had a great impact on my child’s life!

Both teachers considered the potential benefits and made inclusion a reality. Their attitude was, “This is important. We can do it!”

Notes


3. Friend and Bursuck, Including Students with Special Needs.


5. Friend and Bursuck, Including Students with Special Needs.

6. Ibid.


Accommodating the Special Learner in Secondary General Music Classes
Kimberly VanWeelden
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What is This?
Accommodating the Special Learner in Secondary General Music Classes

Kimberly VanWeelden

Abstract
It can be challenging to know which accommodations for special learners can be used within the various secondary general music class settings. Fortunately, there have been several recent music education and therapy articles based on special education practices that have addressed techniques for working with students with special needs in music. These articles recommend using specific educational supports (e.g., written words, icons, color coding, other visual aids, assistive and supportive technology, echoing, and peer mentoring) to help create successful learning experiences for all students. A synthesis of these educational supports and how they may transfer to secondary general music classes are defined and discussed.

Keywords
secondary general music, special needs students, special learners, accommodations

General music at the middle and high school levels encompasses many types of courses, such as music appreciation, guitar, keyboard, drumming, and commercial music (Music Educators National Conference, 1997). Although each course provides unique music learning experiences for students, it can be challenging to know which accommodations for special learners could be used within the various class settings. Fortunately, there have been several recent music education and therapy articles based on special education practices that have addressed techniques for working with students with special needs in music. These articles recommend incorporating a variety of sensory modes, such as visual, aural, and kinesthetic, as well as using specific educational supports to help create successful learning experiences for all students (Adamek, 2001; Hughes & Rice, 2006; Mazur, 2004; McCord, 2001; McLaughlin, 2006; VanWeelden & Whipple, 2005a, 2005b, 2007a, 2007b; Whipple & VanWeelden, 2009). A synthesis of these educational supports and how they may transfer to secondary general music classes are defined and discussed below.

Written words are key concept words that are emphasized within a lesson, such as composer names, composition titles, and music terms. Because of the number of concepts often used/taught within a secondary general class, careful attention should be made to write only those words that are truly the main concept(s). These words may be written on the board, in the student(s) music, or provided individually via flash cards or on a “word bank” sheet. The purpose of this educational support is to help students focus on the main concepts as well as provide a visual representation that includes the correct spelling, which is beneficial for all. Teachers may also find this support useful when devising assessments for individual students. Since this support highlights key concept word(s) for each lesson, it may help remind and/or determine what should be included in modified assessments, which can be particularly useful when preparing to assess students with intellectual disabilities.

Icons are pictures or symbols that represent written words. These icons may be used in lieu of or paired with written words. For example, a picture of Beethoven could represent his name or the picture in combination with his written name could be used to represent this term/concept. Additionally, since music already incorporates many symbols, such as dynamic and articulation markings, picture icons may be needed to represent these concepts as well. Teachers can provide icons for whole class use or have students create their own individual iconic representation. The purpose of this support is to use the same visual icon every time a specific word or concept is discussed so paired associations are formed. This support is particularly

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helpful for students who have difficulty reading or who are visual learners. These icons should be included on adaptive or modified assessments for students who use iconic representation.

**Color coding** is using the same colored background or font for like-type objects, concepts, or terms. Examples of this support include using a red background on the written words and/or pictures of Beethoven, Mozart, and Bach (designating they are all composers) or using a blue background to designate all things Beethoven (i.e., his name, picture, and compositions). Color coding is similar to iconic representation and is often paired with other educational supports, such as written words and icons. The purpose of this support is to help students connect concepts by color and is particularly useful for students with intellectual disabilities, learning disabilities, or visual impairments. Since this support represents a specific object, concept, or term, it is important to use the same visible color each time to form paired associations. Also, depending on the students’ ability, teachers may want to provide this support for them or allow students to determine a color schema on their own. Teachers should also apply color coding on adaptive or modified assessments if students use this type of support.

**Other visual aids** are objects, pictures, or movements that provide opportunities for students to experience the concept(s) through seeing, hearing, touching, and moving. The purpose of this support is to enhance learning and understanding, which is different from iconic symbols. Visual aids within this category could include actual instruments or different types of metronomes (objects); showing instruments or concert experiences that cannot be provided during class, such as a pipe organ or a symphony concert (pictures/video); or experiencing a ritardando or accelerando through different speeds of walking (movement). Additionally, adaptations to written materials used in class are also included within this educational support, such as highlighting, enlarging, or simplifying worksheets and music scores. This support is useful for all students as it incorporates various sensory modes and can enhance key concepts. Teachers may also find these visual aids useful since they can provide assessment material within different sensory modes.

**Assistive and supportive technology** consists of low and/or high technology adaptive devices, including augmentative and alternative communication systems. The purpose of this technology is to help students learn and function within the class. Low-technology adaptive devices are relatively inexpensive and include wheelchair lapboards, Velcro® to attach instruments or mallets to student’s hands, or using doorstop wedges as jumbo guitar picks. High-technology adaptive devices are more expensive and include computer software that can read out loud, speak what is typed, type what is spoken, or magnify electronic documents and song lyrics. Although there are many wonderful adaptive devices that can assist students within secondary general music classes, the availability of these resources often differs by school district. Therefore, music educators should consult special education teachers and other school-based therapists to gain ideas of what assistive technology is available and would be helpful to students in their music classrooms.

**Echoing** is a teaching technique that allows students the opportunity to repeat words orally immediately after teacher use. The purposes of this educational support are to improve and assess correct pronunciation, ensure listening and processing, and provide a kinesthetic learning opportunity. This technique is not rote learning but rather a way to solidify concepts through oral repetition. For example, students could repeat the word Beethoven since it is pronounced differently than it is spelled. Echoing should be paired with other education supports, such as written words, icons, or color coding. This support is beneficial for all students when introducing concepts and can be particularly helpful to students with intellectual disabilities if employed throughout the lesson whenever the word(s) is used. Because of the nature of this support, however, echoing should not be used during assessment.

**Peer mentoring** is a technique that pairs a student with special needs with another member of the class. The purpose of this support is to provide students with the type of individual attention they need to participate to their fullest extent within a class, especially if paraprofessionals are unable to assist. To create a successful peer mentorship program for all students, teachers should ask the special learner if he or she would like to have extra help during the class as well as the potential peer mentor if he or she is willing to take on additional responsibilities. A small training session should also be required for all peer mentors so they understand their role and responsibilities. This program can foster both educational and social benefits for students with special needs. Peer mentors can also benefit from this experience since they will use their natural leadership and nurturing abilities. Finally, teachers will find they do not have to stop their instruction multiple times in order to answer questions or give aid to specific students, which will allow greater lesson flow. This educational support may be used during assessments, since peer mentors could help students by reading the directions or writing answers for students who need to give their responses verbally, however, it is important that teachers communicate with these mentors so they do not lead special learners to the correct answers.

The educational supports discussed throughout this article will help make music learning possible for students with special needs, regardless of the secondary general music class setting. Additionally, most of these supports can be very helpful when evaluating and assessing students.
And though each support is unique, and often targets a specific sensory mode, used together they can help teachers meet the needs of all learners within their music classrooms.

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Barriers to Effective Inclusion and Strategies to Overcome Them
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What is This?
Barriers to Effective Inclusion and Strategies to Overcome Them

Alice-Ann Darrow

Much progress has been made in the past three decades to improve the quality of education for students with disabilities. Schools have had to undergo complex changes in order to implement the special education laws regarding access to and structure of educational services. Although services have dramatically improved, there remain frequent barriers to successful inclusion that can be summarized in three main areas: organizational, attitudinal, and knowledge (Kochhar & West, 1996). It is important for teachers to recognize and understand these possible barriers and to identify possible solutions within their schools or classrooms.

Organizational Barriers

Organizational barriers relate to the ways schools and classrooms are structured, how goals for students with disabilities are defined, how instruction is delivered, and how classrooms are managed.

Music educators typically teach dozens, if not hundreds, of students each day. Some of the major concerns voiced by music educators relate to lack of time to gather information and plan for students with disabilities, lack of support from administrators, and difficulty with classroom management (Darrow, 1999). In addition, some music educators are given teaching assignments for which they may not be trained or qualified, such as teaching students with severe disabilities in self-contained classrooms. These organizational barriers, if not addressed and resolved, may play a role in creating negative attitudes toward working with students who have disabilities.

Another organizational barrier could be related to how the actual music classroom is set up each day. Music rooms tend to be filled with instruments, chairs, props, audiovisual equipment, computers, and other assorted items. If not organized in a thoughtful manner, these objects could create structural barriers for students who have physical disabilities, students who have visual disabilities, or students who have attention or behavior problems. In addition, teachers may not have access to adapted instruments that would aid them in teaching their students with disabilities.

Strategies to Overcome Organizational Barriers

- Discuss concerns with administrators and offer solutions to solve the problems. Offering solutions will require discussion with others and prior planning. Always keep the needs of the students in the forefront and explain why the current situation is detrimental to the education of the students, if that is the case.
- Choose one or two students to focus on at a time, rather than all of the students who have disabilities. For these one or two students, gather basic information regarding strengths, needs, individualized education plan (IEP) goals, and effective intervention strategies. It is likely that once this information is understood and used, the information will generalize to fit the educational needs of other students.
- Educate administrators about the distinct differences between music education and music therapy. In some situations, music therapists who have extensive training and experience working with students with special needs may serve students with severe disabilities more effectively than music educators do. Music therapists also can work as consultants to classroom teachers and music educators to help develop effective music-based interventions that are appropriate for the age and functioning level of the student.

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• Set up the music room in a way that provides an adequate structure for the needs of the students who are in the classes. For a child in a wheelchair, be sure there is plenty of room for the child to enter, move about, and exit the class with the same ease as the students who are mobile. For a student who is blind or has a visual disability, set the room up in a consistent way each day so that the student can learn the map of the room. If changes are made, give verbal directions so that the student can learn the new set up and adapt his or her map of the room. For a student with attention or behavior problems, make sure that distracting or tempting instruments are not easily accessible or within easy reach.

There are a host of music companies, such as West Music, that have online stores and catalogs and manufacture and/or sell adapted musical instruments and music. Include these items in your next budget, or ask the principal or parent-teacher organization to purchase a few each year. There are also adaptations to existing instruments that the school or district physical therapist, occupational therapist, or rehabilitation engineer may be able to help you make—depending on the needs of the students.

Attitudinal Barriers

Attitudinal barriers relate to the beliefs and attitudes that teachers may have about educational services for students with disabilities, including students’ accommodation in the general education setting, interactions with parents and guardians, and students’ participation in schoolwide and community activities. The attitudes of students who do not have disabilities toward students who have disabilities may be a reflection of those modeled by the teacher.

Negative attitudes may stem from lack of information, misinformation, previous experiences, or difficult situations that remain unresolved or unsuccessful. Teachers may have misconceptions about working with students who have disabilities, or they may have fears that they will not be effective teachers in an inclusive setting. Teachers may also be concerned with how inclusion will affect the classroom climate and the education of students who do not have disabilities. Inclusion requires new ways of thinking about teaching, new approaches to communication and collaboration, and new attitudes about sound educational practices.

Positive attitudes may be developed and enhanced in many different ways. Teachers are encouraged to discover students’ strengths and develop instructional methods and adaptations that build on those strengths. In addition, developing relationships with individual students helps teachers humanize the experience and learn about the students, beyond the disabilities. Peers may need structure and direction from the teacher to enhance socialization, interaction, and respect for each other (Humpal, 1991; Jellison, Brooks, & Huck, 1984).

Strategies to Overcome Attitudinal Barriers

• Find out information about the strengths and accomplishments of a few of the students with disabilities who are in the music class. What can these students do to contribute to the positive climate of the classroom or the music environment?

• Talk to other teachers or professionals about ways to solve difficult problems related to students with disabilities in the classroom. Collaborative efforts among teachers can provide support to teachers who are struggling with difficult students or difficult situations.

• Talk to students about the many ways that people can contribute to the class so students can see that all students have positive attributes that can enhance the classroom environment.

• Students might be afraid of students who have severe disabilities. They may need information and structured activities to get to know the students as individuals rather than as just a disability.

• Positive attitude, language, and respect by the teacher provide an appropriate model for students to develop positive attitudes about students with disabilities in the class.

Knowledge Barriers

Knowledge barriers relate to the range of knowledge and skills that teachers need in order to provide effective services to students, such as adapting the curriculum and instructional methods, providing necessary classroom structure and management, and developing appropriate goals and interventions based on the age and functioning levels of the students.

Music educators must have adequate knowledge and information in order to educate and include students with disabilities in their classrooms. Some of this information may come from collaborating with the regular education and/or special education teachers as well as with other specialists who work with the students. Collaboration is
key to successful inclusion. Through collaboration the music educator can find out specific information about the students, including strengths and weaknesses, goals, and effective instructional methods used by other teachers. Music educators may develop their expectations for a student’s participation in music based on information provided by the team.

**Strategies to Overcome Knowledge Barriers**

- Educate yourself about the general characteristics of specific disabilities (e.g., if there are several students with autism, learn about typical behaviors and characteristics of children with autism).
- Talk with the team members (classroom teachers, specialists such as art and physical education teachers, and therapists such as speech and language pathologists or occupational therapists) to determine the student’s abilities and needs and effective intervention strategies. Find out the student’s IEP goals that could be addressed in music.
- Develop intervention strategies and classroom accommodations to support the student’s learning in music class. Use music that is age appropriate and music activities with which the student can be successful. Ask the question, “Would I use this music with same-age students who do not have disabilities?” If the answer is no, find music that is better suited to the age of the student.

Eliminating the barriers related to organization, attitudes, and knowledge could set the stage for more effective inclusion practices. It takes continuous efforts by all professionals to make sure that integration and acceptance is infused in all aspects of the educational system, starting at the classroom level. Seek help, and do not be afraid to ask for it. A school’s special educators are often a valuable resource for breaking down barriers.

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Culturally Responsive Teaching: Understanding Disability Culture
Alice-Ann Darrow
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What is This?
Culturally Responsive Teaching: Understanding Disability Culture

Alice-Ann Darrow

Abstract

To be culturally responsive teachers, we must first have an understanding of other cultures and how students from these cultures differ from one another. As we consider the many cultures represented in our classrooms, we might also consider students with disabilities as a cultural group. Within any main culture are subgroups differentiated by status or factors that functionally unify the group. Culturally responsive teachers understand that students with disabilities may represent a subculture within the classroom—and consequently follow certain guidelines that facilitate their inclusion.

Keywords
culture, disability, general music, responsive teaching

As educators, we are likely familiar with the concept of cultural diversity and the need for students to develop an understanding of their multiethnic world and community. Students must learn to function in environments that include people from many diverse backgrounds. Consequently, many of us understand the challenges of making instruction “culturally responsive.” As increasing numbers of students from diverse backgrounds enter our classrooms each year, the need also increases for instructional approaches that are culturally inclusive. Today’s teachers must educate students varying in culture, language, religious beliefs, as well as many other characteristics (Gollnick & Chinn, 2002).

To meet this challenge, teachers must employ not only theoretically sound but also culturally responsive pedagogy. Teachers must create a classroom culture where all students regardless of their cultural and linguistic background are welcomed and supported, and provided with the best opportunity to learn. (Richards, Brown, & Forde, 2007, p. 64)

To be culturally responsive teachers, we must first have an understanding of other cultures and how students from these cultures differ from one another. Culture is considered the characteristics of a particular group of people, generally defined by language, religion, politics, social habits, and the arts (Zimmerman, 2012). As we consider the many cultures represented in our classrooms, we might also consider students with disabilities as a cultural group. Within any main culture are subgroups differentiated by status or factors that functionally unify the group. Many students with disabilities share a group identity, either because of the physical or cognitive nature of their disability or because, throughout their schooling, they have shared time together in resource rooms or self-contained classrooms. For many years, students were segregated by their disability, and this continues in some educational contexts. To be culturally responsive teachers, we must have an awareness of a group’s history of oppression.

Disability History and Educational Reform

During most of the 1800s, students with disabilities were not considered eligible for public education. By the early 1900s, there were some private programs for students with disabilities, although most students received no public school education. Educational opportunities for students with disabilities increased throughout the 1900s; however, the majority of these students were educated in residential institutions and asylums throughout the first half of the century. This was especially true for students with severe disabilities who were primarily housed in underfunded and sometimes inhumane institutions. During the 1970s, when

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these students were offered educational services in public schools, but these services were provided in separate and segregated schools and classrooms.

The 1980s brought increased pressure to provide more integrated educational experiences for students with disabilities, limiting the need for segregated special education placements. From this time to the present, different educational models have been developed to provide normalized, inclusive experiences for students with disabilities. In the mid-1980s, the Regular Education Initiative (REI) was introduced as a model to improve educational services for students with disabilities. Proponents of the REI called for a dismantling of the dual system of education (general education and special education) in favor of a unified system. The new unified system would be developed to meet the unique learning needs of all students. This movement challenged educators to reevaluate current educational practices related to at-risk students as well as students with disabilities. The REI served as a catalyst for change, moving education from a segregated system to a more inclusive and integrated system (Adamek & Darrow, 2010).

Disability Culture

All individuals share a culture. Our culture influences our behaviors, shapes how we see the world, and defines how we see ourselves. Likewise, culture also determines how we make sense of disability and respond to people with disabilities. Persons with disabilities are viewed very differently dependent upon the region of the world in which they live. In some countries, people with disabilities are still segregated and lack access to education (Charlton, 2000). Even in the United States, many individuals with disabilities have had to battle discrimination in terms of employment, housing, education, and access to public buildings and services (Americans With Disabilities Act, 1990). As do individuals from many other cultures, persons with disabilities share a common bond of experiences and resilience. This common bond has resulted in what some authors term disability culture (Jones, 2002). Brown (1996, 2002), the most noted author on the topic, shares several perspectives on disability culture:

Those of us working the field of disability culture probably all agree on several basic points. First, disability culture is not the same as how different cultures treat different disabilities. Instead disability culture is a set of artifacts, beliefs, expressions created by disabled people ourselves to describe our own life experiences. It is not primarily how we are treated, but what we have created. Second, we recognize that disability culture is not the only culture to which most of us belong. We are also members of different nationalities, religions, colors, professional groups, and so on. Disability culture is no more exclusive than any other cultural tag. (Brown, 2002, p. 49)

People with disabilities have forged a group identity. We share a common history of oppression and a common bond of resilience. We generate art, music, literature, and other expressions of our lives and our culture, infused from our experience of disability. Most importantly, we are proud of ourselves as people with disabilities. We claim our disabilities with pride as part of our identity. (Brown, 1996, p. 30)

Culturally Responsive Teaching and Students With Disabilities

Culturally responsive pedagogy comprises three dimensions: (a) institutional, (b) personal, and (c) instructional. The institutional dimension reflects the administration and its policies and values. The personal dimension refers to the cognitive and emotional processes teachers must engage in to become culturally responsive. The instructional dimension includes materials, strategies, and activities that form the basis of instruction (Richards et al., 2007). Although all three dimensions are important, the second and third dimensions figure most importantly in being culturally responsive teachers to students with disabilities. Teachers who are comfortable examining their instructional practices and their own beliefs about and attitudes toward students with disabilities are most likely to aptly respond to the needs of all students.

To make teaching more culturally responsive, several authors have made suggestions applicable to students with disabilities (Banks & Banks, 2004; Darrow & White, 1998; Gay, 2000; Ladson-Billings, 1994; Nieto, 1999):

1. Monitor and address any student’s implicit or explicit alienation within the class social structure. Two factors often associated with disability prejudice and discrimination are the type of disability and its visibility. The more severe or visible a disability, the more likely a student will encounter isolation or other forms of discrimination. Teachers must be vigilant in observing social interactions within the classroom

2. Use respectful terminology when referring to students with disabilities: As music educators, we can do much to promote the image of students with disabilities in our schools by using appropriate terminology in our teaching and communications with others.
3. Learn about the history and experiences of students with disabilities: It is important that teachers learn about the lives and experiences of students with disabilities to understand the role history played in their educational outcomes and how society views disability.

4. Acknowledge students' abilities as well as their disabilities: Although it is important for teachers to note students' disabilities, particularly as they relate to instruction, it is equally incumbent that teachers recognize, highlight, and affirm their abilities.

5. Educate all students about disabilities, particularly those represented in the classroom: When peers do not understand disabilities, there is a greater probability students will experience prejudice and discrimination.

6. Allow students with disabilities to be “the helper” not always “the helped”: Because students with disabilities often require assistance in the classroom, they rarely experience the joy of helping others. All students need to feel useful and valuable.

7. Maintain expectations that are high yet appropriate to a student’s disability: All students have the potential to learn, regardless of their disability. A student’s learning is commensurate with a teacher’s expectations.

8. Encourage students with disabilities to assume leadership roles: Leadership potential in students with disabilities needs to be recognized and promoted for these students to truly maximize their capabilities. Encourage the empowerment of students with disabilities.

9. Motivate students with disabilities to self-advocate and to become active participants in their own education: Students with disabilities who learn to self-advocate when they need services will be better prepared for the world that awaits them at graduation.

10. Challenge stereotypic views of disability played out in the media: As teachers, we must be mindful never to propagate media-driven stereotypes in our teaching, and take advantage of opportunities to highlight realistic and affirming portrayals of persons with disabilities.

Instruction that is culturally responsive addresses the needs of all learners. Teachers have a responsibility to ensure that students with disabilities have an equal opportunity to achieve to the best of their abilities. Teachers who are culturally responsive understand that disability may represent a subculture within the classroom, and consequently demonstrate acceptance and support. By engaging practices and demonstrating values that include rather than exclude students with disabilities, teachers fulfill their responsibility to be culturally responsive to all students.

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Music Educators' Involvement in the Individual Education Program Process and Their Knowledge of Assistive Technology
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Music Educators’ Involvement in the Individual Education Program Process and Their Knowledge of Assistive Technology

Kimberly A. McCord¹ and Emily H. Watts¹

Abstract
In 1997, the Individuals With Disabilities Education Act of 1990 was amended to require that assistive technology be considered when preparing an individual education program (IEP). This study explored involvement of Midwestern music educators in the IEP development process as well as their knowledge and attitudes regarding use of assistive technology in teaching students with disabilities. Music educators reported that they continue to have a low level of self-reported involvement in educational planning for students with disabilities. Although music educators recognize the utility of assistive technology, their knowledge base remains limited. Music educators identified the need for better preparation to teach students with disabilities as well as improved interdisciplinary collaboration.

Keywords
assistive technology, IEP, IEP process, IDEA, attitude, music educator, disabilities

The Individuals With Disabilities Education Act of 1990 (IDEA) mandated free, appropriate public education in the least restrictive environment for children with disabilities. In 1997, IDEA was amended to require that assistive technology (AT) be considered when preparing an individual education program (IEP). Music education classrooms and ensembles are included within the scope of IDEA. AT is defined as “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of children with disabilities” (IDEA, 1997). AT can be used to augment an individual’s strengths, using abilities to counterbalance disabilities. AT can also provide an alternative means of performing a task to compensate for a disability or bypass it completely (Lewis, 1993). In addition, AT can be conceptualized as a cognitive prosthesis to replace an impaired ability or as a cognitive scaffold providing support to accomplish tasks more effectively, efficiently, and independently (Blackhurst, 1997; Cavalier, Ferretti, & Okolo, 1994). It may also serve as a leveraging agent, allowing students with disabilities to experience greater academic success and independence (B. R. Bryant & Seay, 1998; D. P. Bryant, Bryant, & Raskind, 1998; Raskind & Higgins, 1998). Moreover, AT serves as a conduit for students with disabilities to gain access to the general education curriculum (Puckett, 2004; Smith & Jones, 1999) and computer-based music instruction (Gregory, 2002). Studies have shown that music education programs serve diverse students with varying types and degrees of disabilities (Atterbury, 1986a; Frisque, Niebur, & Humphreys, 1994). A review of literature reveals two issues related to inclusion of students with disabilities: (a) level of involvement of music educators with students who have disabilities and (b) music educators’ preparation and training.

Level of Involvement of Music Educators With Students Who Have Disabilities
A number of surveys have been conducted of general education teachers’ attitudes about inclusion with respect to the student’s disability (Avramidis & Norwich, 2002), the need for teacher collaboration (Soodak, Podell, & Lehman, 1998), and the positive impact of prior experience with students with disabilities on teacher attitudes.
Music Educators’ Preparation and Training

Music educators have indicated that they often do not feel adequately prepared to create adaptations for students with disabilities (Frisque et al., 1994; Gfeller et al., 1988; Gilbert & Asmus, 1981). Colwell and Thompson (2000) investigated the availability of special education courses for music education majors and reported that 74% of 171 colleges and universities had at least one course offering for music education majors. Of these programs, 86% (109) required an introductory special education course for music education majors. Even though there have been increased certification requirements for teacher candidates, there are still a number of programs that do not require special education coursework for a music education major. However, some music education methods faculty may integrate strategies for teaching students with disabilities in their music classes (Heller, 1995).

Absent from the literature are any empirical studies examining the music educator’s knowledge or perceived importance of AT as a means to educate students with disabilities. Although previous studies provide some foundational information regarding the education of students with disabilities within music education programs as well as possible needs in training and professional development, there is a lack of current research concerning (a) music educators’ level of involvement in the IEP process after recent amendments to IDEA requiring consideration of AT for students with disabilities and (b) music educators’ knowledge and perceptions about a range of potential assistive technologies for students with disabilities.

The purpose of this study was to gather data from K–12 music educators regarding their involvement in the IEP process, their knowledge of AT devices that could be used in the music classroom, and their perceptions regarding the importance of AT for students with disabilities. This study examined the following research questions:

1. What is the self-reported involvement of music educators in the IEP process for students with disabilities?
2. What is the self-reported special education training of music educators, preservice and in service?
3. What is the self-reported knowledge of music educators about AT for use with students with disabilities in music settings?
4. What is the self-reported importance music educators place on AT in music settings?

Method

Development of Survey Instrument

Using multiple sources, the authors developed a pilot survey instrument from a content analysis of published research in music education for students with disabilities and the literature on AT (D. P. Bryant & Bryant, 2003) to ensure current language from both fields. In addition, demographic and content items were adapted from the following: a published AT survey (Thompson, Siegel, & Kouzoukas, 2000) and The Survey Kit, a series of books on how to conduct survey research (Fink, 2002). The survey instrument included sections on music education and IEP involvement, knowledge and perception of the importance of a range of assistive technologies, and various demographic items. Demographic items included gender, age, degree attained, music specialty, grade levels, years taught, number of preservice courses with content on students with disabilities, and number and
type of in-service activities with content on students with disabilities. Furthermore, a listing of student disability categories was included for respondents to check all that represent students whom they have taught. The categories were autism spectrum disorder, emotional or behavioral disorder, deaf or hard of hearing, mental retardation, learning disability, physical disability and/or health impairment, speech-language impairment, and visual impairment. The authors collaborated together on currently accepted descriptions of the categories of AT to generate examples of specific devices that related to the delivery of music education for students with varying disabilities (Watts, Thompson, & Wojcik, 2003). Within the field of AT, the authors chose four general categories of AT that have specific relevance to music education. These include (a) vision and reading aids, (b) computer and musical instrument aids, (c) communication aids, and (d) seating and positioning aids (see Figure 1).

A 5-point Likert-type scale was used to measure self-reported involvement in adapting music education goals and benchmarks for students with disabilities. Items ranged from a rating of 1, which represented no knowledge in this area, to a rating of 5, which represented competency in this area. Next, an a priori question (i.e., dichotomous yes–no question) focused on whether or not the music educator participated in four possible ways: (a) planning, (b) writing, (c) carrying out goals or benchmarks, and (d) progress updates for current students in special education. If the response was yes, then they were directed to rate the extent of their participation in these four IEP processes. The rating scale ranged from 1 (no extent) to 4 (great extent). If the response was no, they were to “check all that apply” from a list of seven possible reasons for noninvolvement. An open-ended “other” response option was provided for written comments. The next section of the survey directed respondents to rate (a) their knowledge of AT and (b) the perceived importance across four specific categories of AT. The knowledge rating scale spanned from 1 (little knowledge) to 5 (much knowledge); likewise, the importance scale ranged from 1 (not important) to 5 (very important) on a Likert-type scale.

Next, a pilot field test of the survey instrument was conducted with nine reviewers (i.e., faculty and graduate students) from a Midwestern university in the fields of music education and music therapy. The reviewers were apprised of the purpose of the survey and the intended audience. Also, they were given instructions to comment on (a) the readability of the items, (b) the content of the items, and (c) the clarity of the instructions for completing the survey. Based on their feedback, the survey instrument was revised. Approval for the survey, consent form, and cover letter was obtained from the university’s institutional review board.

Participants

A membership roster of 1,416 music educators was obtained from a large Midwestern state affiliate of the National Association for Music Education. A total of 400 K–12 music educators representing all specialty areas (i.e., choral, band, strings, general) were then randomly chosen and stratified according to geographic location (i.e., metropolitan vs. nonmetropolitan) to ensure representation across the state. Each participant was assigned a number for record-keeping purposes only.

Procedures

A survey packet including a cover letter, the survey questionnaire, and a stamped return envelope was mailed to each participant at his or her school address. The cover letter described the purpose and the confidential and voluntary nature of the study and explained that there were no right or wrong answers to the survey questions. Respondents were assured anonymity through a blind tabulation of the responses. In addition, the cover letter provided contact information should any of the respondents have questions or concerns. A second wave of surveys was mailed 1 month later to the participants who had not responded to the first survey. On receipt of all of the participant responses, the survey data were entered into a statistical program for analysis, and the accuracy of data entry was verified by another researcher. Frequency counts, percentages, and cross-tabulations were calculated to summarize the responses and to describe the results.

Results

A total of 201 survey questionnaires were returned and deemed usable, 50.7% (102) from a metropolitan area and 49.3% (99) from nonmetropolitan areas. Five surveys were returned as undeliverable, and three others were unusable because of a lack of responses to a majority of items on one or more pages of the survey questionnaire. Excluding the undeliverable and unusable returns, the adjusted overall response rate was calculated to be 51.2% (201 out of 393).

Demographics

Demographic data indicated that 60 (29.8%) respondents were male and 141 (70.1%) were female, with a mean age of 40.8 years and a range of 22 years to 63 years (see Table 1). Approximately 51.8% (104) of music educators held advanced or specialist degrees, and 58.7% (118) of respondents had been teaching for 11 years or more. Most respondents (126 out of 201) indicated general music as one of their areas of music instruction (see Table 1).
Each respondent was given the opportunity to indicate training and staff development in the past 5 years for education of students with disabilities. Reported training and staff development options were informal peer training, conferences, single-day workshops, college courses, and preconference sessions. The largest number of respondents (i.e., 82) indicated informal peer training as the manner in which they received additional training. However, 54 of the respondents indicated that they had not received training in the past 5 years (see Table 2). Learning disabilities and emotional or behavioral disorders were the special needs most commonly encountered by the music educators surveyed. These results are consistent with findings from Frisque et al. (1994).

### Involvement With IEP Development

The first research question addressed respondents’ involvement in IEP development. The substantial majority of respondents, 85.6% (172), indicated that their role as a music teacher included adapting music education goals and objectives for students with disabilities. However, when asked to rate their level of knowledge and skill, only 9.0% (i.e., 18 teachers out of 199) rated their skills in this area as being competent.

Even though their role includes the expectation for adapting goals and objectives, more than half of the respondents, 63.2% (127), stated they did not participate in IEP development (e.g., planning, writing, carrying out goals or benchmarks, reporting progress updates). The most frequently cited reasons given for their lack of involvement in the IEP included either not being invited to attend the IEP meeting or not being informed of the particular IEP meeting time (see Table 3).

Through an open-ended response option, music educators could indicate “other” as a reason for not participating in the IEP. Here, some respondents explained that schedules and logistics kept them from being able to...
participate in the IEP development: “IEPs are done all on one day—subs would be required,” “I send in written comments on how students progress in my classroom,” “I speak personally with the special education people about my special kids,” and “Informal meetings used for adaptations.” Others seem to be left out of the process entirely: “Not allowed to participate in IEP process.”

However, 36.8% (74) indicated that they were involved in the IEP development. Using a rating scale, teachers characterized the extent of their participation in the IEP development within four targeted areas (i.e., planning, writing, carrying out goals or benchmarks, and reporting progress updates). Of those 74 music educators who were involved, 64.9% (48) indicated they carried out goals or benchmarks and reported progress updates to the special education team. However, 87.9% (65) of respondents indicated that they had little or no experience in the writing of the IEP, and 83.8% (62) indicated they had little or no involvement in planning the IEP. Therefore, their role could be characterized as secondary in nature when the development of a student’s IEP is formulated.

Perception of AT Knowledge and Importance

The third and fourth research questions addressed respondents’ knowledge and perceived importance of AT in relation to students with disabilities in music education programs. The first general category of AT on the survey was vision and reading aids. This included software screen readers, Braille devices, and screen magnifiers. Most of the music educators (69.2%) indicated they had little knowledge about vision and reading AT. Yet more than a third of the respondents (38.3%) indicated that vision or reading aids are “important to very important” in relationship to the music education of students with disabilities.

The second general category of AT was computer and musical instrument aids such as a variety of adaptive keyboards, pointing devices, touch screens, and alternative MIDI instruments. More than half of the respondents, 60.2% (121), indicated little knowledge of devices from the computer or musical aids category and only 2.0% (4) reported much knowledge. Yet more than a third of the respondents, 36.3% (73), indicated computer and musical instrument aids are “important to very important.”

The third general category on the survey was communication aids, including products such as communication boards, note-taking devices, amplification devices, and software with visual cues. Exactly 51.2% (103) of respondents rated themselves as having little knowledge of devices in the communication aids category, with only 1.0% (2) of music educators having much knowledge, although 49.8% (110) of respondents indicated that communication aids were “important to very important.”

The fourth general category of AT was seating and positioning aids. Adaptive seating, wheelchair modifications, and mounting devices to hold instruments would be included in this category, as would hardware that improves posture or provides physical stability or support. More than half of the respondents, 52.7% (106), reported having little knowledge of seating and positioning aids. Only 2.5% (5) music educators indicated much knowledge in this category. Furthermore, a majority of respondents, 52.3% (107), indicated that seating and positioning was “important to very important.”

Discussion

This study confirms two disconcerting practices in the fields of music and special education. First, in more than 20 years there has been little improvement in the involvement of music educators in the IEP development process. Previous surveys beginning in 1981 (Atterbury, 1986b; Frisque et al., 1994; Gfeller et al., 1988; Gilbert & Asmus, 1981; White, 1981-1982) confirm that music educators were not included in the development of students’ IEPs and yet they were expected to adapt for children with disabilities in their music programs. According to the IDEA mandate, students must have access to the general education curriculum, and that includes music education. Music educators should consider their responsibility that all children have equal access to the music curriculum. The present study confirms that the majority of music educators still are not involved in developing the IEP for students with disabilities.

Second, experienced music educators are not knowledgeable about current use of AT as a means to educate students with disabilities. Furthermore, current music educators indicate that AT is important even though they have little knowledge about AT devices and adaptive equipment.

In the present study, respondents rated themselves on their level of knowledge and skills in adapting music education goals and objectives for students with disabilities. Perhaps the most disconcerting finding was that 91% (181) of respondents indicated they were not competent in adapting instruction for students with disabilities.

Music educators in this study reported teaching a wide range of students with disabilities. Yet very few were aware of the range of categories of AT even though the use of AT may increase success of students with disabilities in music classes and ensembles. Two categories that music educators know more about are the general categories of communication aids and seating or positioning...
aids. A possible explanation for the higher level of knowledge of these devices is that teachers more frequently have students with disabilities coming to music classes with these types of devices. Another explanation for familiarity with these devices could be that many music teachers see these devices routinely advertised in familiar music catalogs.

As for the remaining general categories, vision and reading aids and computer and musical instrument aids, more than half of music educators reported that they have little knowledge of these devices. Lack of knowledge about AT is a significant barrier to music educators’ involvement in the educational programming and services for students with disabilities.

**Recommendations**

It is recommended that systemic change take place in the IEP development process. Music educators can be proactive by communicating with special educators and expressing interest in being involved in future IEP development meetings (e.g., through email, through staff development activities, or at times when annual IEP updates occur). Another recommendation is that special educators begin to facilitate a dialogue with music educators, viewing them as partners in the IEP team. It is important for music educators to give special educators IEP recommendations regarding the most appropriate music instruction class and least restrictive environment for each particular student. Special educators need to know the types of technology that already exist in music educators’ classrooms. Special educators also need to know and understand what activities and tasks occur in music classes and ensemble rehearsals to help the music educator with adaptations, instructional technology, and AT decisions. If paraprofessionals are available to support a student in the regular and special education classrooms, then they should receive training on AT, attend music classes with the child, and help support the child in learning music.

If AT is recommended in the IEP, special educators need to make music educators aware of this educational need. For instance, children with visual impairments can access music technology software including notation and sequencing programs. If music educators are included in the IEP development, they can advocate for students with visual impairments to have options such as Braille translators that interface with these notation and sequencing software programs.

Music teachers may become more knowledgeable and skilled through a series of staff development activities with follow-up support, Web-based modules and resources, and university course offerings in AT. In addition, there needs to be more offerings at state and national conferences on using AT for children with disabilities. The findings of this survey demonstrated that music educators had very little knowledge about AT. Informal training and staff development activities were reported by respondents in this survey as a means of accessing information about educating students with disabilities.

Special educators need support from music educators as well. Because one of the roles of special educators is to collaborate with families in developing and implementing educational programming, they can facilitate the bridge among music educators, related service providers (e.g., speech pathologists, physical therapists, music therapists), and families of students with disabilities so that children’s needs are being met by skilled, informed professionals.

Through collaboration, music educators and special educators can develop strategies for meeting the musical needs of children with disabilities. First and foremost, it is imperative that music educators be asked to be included in any IEP meeting for a student they teach. Second, they should have opportunities to acquire the knowledge and skills to support students who use AT. Practical outcomes of this collaborative dialogue may result in more active and supported participation by students with disabilities in music education classes and ensembles.

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Learning Disabilities in the Music Classroom: Implications for the Music Educator

By Cynthia M. Colwell

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Vast changes in the education of children with disabilities have occurred in the past 40 years. Until the 1960s, schools were allowed to exclude children with disabilities, but federal legislation and related court decisions, including the Elementary and Secondary Education Act of 1965 (P. L. 89–10), Section 504 of the Rehabilitation Act of 1973, The Education for All Handicapped Children Act of 1975 (P. L. 94–142), and the recent amendments to the Individuals with Disabilities Education Act (IDEA) in 1997 (P. L. 101–476, amendments P. L. 105–17), have gradually opened the door to free and appropriate education in the least restrictive environment (Horne, 1996). The most recent law and its subsequent amendments mandate that eligible children with disabilities have special education and related services designed to address their unique educational needs made available to them.

Under the current IDEA law, there are six principles that provide the structure for special education: free appropriate public education, appropriate evaluation, individualized education program (IEP), least restrictive environment, parent and student participation in decision making, and procedural safeguards. Of the six principles, those that have the most impact on music educators are free appropriate public education, individualized education program, and least restrictive environment (Heumann, 1994).

Free appropriate public education designates that each child with a disability is entitled to a no-cost program of regular and special education services that are appropriate for his or her specific needs. General and ensemble-specific music is a core part of public school education in this country; thus, children with disabilities have the right to participate in these programs. The IEP is a written statement tailored to each student with a disability and includes information on the present level of his or her educational performance, how his or her disability affects performance, measurable annual goals and short-term objectives, special education and related services, program modifications, dates of services, and transition plans. If music is included as an annual goal, which can be requested by the parent, child, educator, or advocate, the music teacher will need to be included in this process and begin keeping documentation on music and perhaps social skills in the music setting. The principle of least restrictive environment is that children with disabilities will be educated with their able-bodied peers unless this education is not effective even with the use of supplementary aids and services. Students with disabilities are therefore placed in regular music classes and music teachers, who know best whether students are making progress in their curriculum, have the right and responsibility to ask for supplementary aids and services when necessary.

During the 1994–95 school year, more than 4.9 million children were receiving special education or related services; in the 1993–94 school year, 43.4% of such students were in the regular education classroom with their able-bodied peers (U.S. Department of Education, 1996). Roughly 5 to 10% of all school-aged children receive services for learning disabilities, with a high percentage being served in the regular classroom; thus, there is a high likelihood that a music teacher will interact with these students in the music classroom (U.S. Department of Education, 1998). According to the U. S. Department of Education and the National Institute of Child Health and Human Development, 17.5% of children will have difficulty learning to read in the first three years of school. Thirty-five percent of students with
learning disabilities do not finish high school. Fifty-two percent of children receiving special education services in the public school system are students with learning disabilities.

Due to the high probability of working with students with learning disabilities, music educators should be familiar with these disabilities. They need to have a working definition of learning disabilities, have an understanding of the various types of learning disabilities, and be aware of academic and social characteristics that accompany the various disorders. Because we work as a team in the elementary school, no one teacher can address his or her subject matter in total isolation. Children bring to the music classroom a myriad of social and academic successes and failures from other parts of their lives. The music specialist should be familiar with how music can be used to address these outside challenges, as well as how the music curriculum may need to be adapted to provide the most successful learning experience.

**Research on Music and Children with Learning Disabilities**

The Individuals with Disabilities Education Act (IDEA) defines a learning disability as a “disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations” (NICHCY, 2001).

Individuals with learning disabilities typically have difficulties in one or more of the following areas: language, arithmetic, auditory processing, organization, attention and concentration, motor coordination, memory, and resulting behavioral issues (NCLD, 2001). With 5% of school-aged children labeled as learning disabled and with inclusion being the educational movement of our times, we are no longer responsible for teaching just music but are charged with teaching the whole child. This includes targeting both music and nonmusic skills in the music setting (Aebischer & Sheridan, 1982; Campbell, 1972; Gfeller, 1984; McCoy, 1982). Children participate in the arts before they enter formal education—they draw, sing, act, and dance. These are natural activities for young children; thus, the arts should function as natural forums to enhance academic learning. The arts allow children to gain discipline as they learn to work toward goals (Smith, 1980, 1988).

Traditionally, there has been an association between teaching music and reading due to the similar skills required (such as auditory discrimination, understanding a symbol system, etc.) (Bygrave, 1994; Hurwitz, Wolff, Bortnick, & Kokas, 1975; Lamb & Gregory, 1993; Martin, 1983; Moyer, 1976; Roskam, 1979). Chants and repetitive action songs target aspects of language such as pitch development, dynamics, and rhythm, as well as aspects of culture, listening skills, articulation, and syllabification. Targeting word recognition, comprehension, reading study skills, and literary appreciation through song lyrics can be more motivating and enjoyable for the reader than simply reading without the musical enhancement (McCarthy, 1985).

Developmental curriculums designed for children with learning disabilities have included suggested activities and materials for the music setting (Kelly et al., 1973; Moyer, 1976; Owens, 1974). In 1976, a program, “Music for Children with Reading Learning Disabilities,” was begun in Newton, Massachusetts, in an effort to teach music skills, to teach skills necessary in language reading through music, and to evaluate whether the development of music skills resulted in an improvement in language reading skills. Classes for students as well as seminars for teachers, parents, and others interested in teaching music to students with learning disabilities were initiated (Moyer, 1976). The focus was on rhythm (developing rhythm patterns through large and small muscle groups), singing (perceiving and
comprehending melodic patterns and producing them accurately), and notation (reading and notating both rhythmically and melodically). “The author felt that children with reading learning disabilities desperately need many of the basic skills which music instruction is uniquely able to give them” (p. 3).

Music has been used with some success to improve math scores for students with learning disabilities. It has been played to mask background noise while students did math problems (Vernetti & Jacobs, 1972), music relaxation and visual imagery have been used prior to working on math (Schuster & Vincent, 1980), and pieces of music selected individually by students have been played while they completed a math exam (Abikoff, Courtney, Szeibel, & Koplewicz, 1996).

Over the past two decades teachers have studied auditory processing issues related to students with learning disabilities. Teachers and therapists have used music and music tests as diagnostic measures to determine melodic/rhythmic aptitude differences between grade-level readers and readers with learning disabilities (Atterbury, 1983a, 1984c, 1985), to formulate a musical profile of students with learning disabilities (Decuir & Braswell, 1978), to detect reading problems (McGivern, Berka, Languis, & Chapman, 1991), to determine hemispheric laterality between typical students and students with learning disabilities (Strong, 1992), and as a therapeutic intervention for speech discrimination (Baxley, 1979), language development (Kranyik, 1970), and auditory awareness (Roskam, 1979).

A child’s initial learning begins with motor responses; thus, deficits in this area can have a domino effect on achievement in other areas. Music teachers have a wonderful opportunity to assist students with perceptual-motor development through rhythm and motor activities (Rosenkranz, 1974) and motor-sensory training targeting body awareness, body relaxation, gross and fine motor training, and sensory perception training (deVincentis & Johnson, 1978). In 1983, Gilbert compared the motor music skills of nonhandicapped and learning disabled children and found that although children with learning disabilities tend to be lagging behind in motor skills, they can benefit from sequential practice and rehearsal.

Students with learning disabilities do not spontaneously use memory strategies (i.e., mnemonic devices). The students’ attention must be engaged, and memory aids need to be demonstrated, practiced, and reinforced. Musical mnemonics are especially effective due to the value and interest music holds for students (Gfeller, 1986). Presenting material in different music formats has proven to be an effective technique in helping students recall information (Bottari & Evans, 1982; Shehan, 1981).

Due to the social ramifications of a disability, ways of using music to effect behavioral change have been examined (Montello & Coons, 1998). Students can have a poor self-image due to the rift between grade level expectations and personal achievement. Music activities focusing on expression of feelings and promotion of success can be used to address this issue (Brodeur, 1989). Teachers have used music for arousal, relaxation, or to trigger positive affirmation discussions in the special education resource room (Applegate & Hamm, 1985).

This review of the research supports the use of music in a variety of ways to address the academic and social challenges for students with learning disabilities and provides valuable information as we consider how best to adapt our curriculum to meet their unique learning styles.

Implications for Music Educators
A model of learning disabilities first established in the 1960s and consistently supported since its inception outlines four stages of information processing used in learning: input, integration, memory, and
output (NICHCY, 2001). Each of these stages is associated with specific types of learning disabilities. Input is the process of the brain recording information that comes from the senses. A disability in this area can manifest itself in either an auditory or visual perception impairment. An individual with an auditory perception disability may not distinguish differences between words that sound similar or may not be able to distinguish between two different musical pitches. An individual with a visual perception disability may reverse letters when reading or may skip lines in a song text when singing.

Integration is the process of interpreting information through sequencing, abstracting, and organizing. An individual with a sequencing disability may not be able to tell a story in order from beginning to end or may not be able to play a repeated rhythmic pattern on an instrument. An individual who has difficulty with abstraction may confuse different meanings of a word used in different contexts or may not be able to transfer information from a music theory lesson to the practical application of performing a piece of music.

Memory is the storage of information for later retrieval. Students with learning disabilities generally have difficulty with short-term rather than long-term memory. For example, a student with a memory disability may not be able to remember a series of numbers for a short time or echo sing a short melody after a model.

Output of information is achieved through language or motor activities. An individual with a language disability may have difficulty responding effectively to a direct question or may have difficulty singing a phrase from a song when asked. Motor disabilities are divided into fine and gross motor difficulties. Individuals with a fine motor disability may have difficulty writing or may have problems fingering notes on the recorder. Individuals with a gross motor disability may stumble and fall or may not be able to do movement activities to music while maintaining a steady beat (NICHCY, 2001; Schwartz, 1985). On top of these four processing areas, there are related behavioral problems, such as distractibility, anxiety, impulsiveness, a low tolerance for frustration, and poor self-esteem (Schwartz, 1985).

Much of the difficulty in working with individuals with disabilities comes from the frustration on the part of both the student and the teacher when the student is not able to perform some tasks developmentally appropriate for his or her age level while perhaps excelling in other areas. This is often misinterpreted as an outright refusal associated with a behavioral problem, as opposed to a legitimate inability to perform the task. It is essential for the music teacher to be aware of who in the class has been diagnosed with a learning disability, what type, and what behaviors are associated with the particular disability. This knowledge will help the music teacher more appropriately interact with learning disabled students and put them in situations where they can be successful while working on areas where there are deficits.

Atterbury (1989) feels strongly that music teachers should be involved in placement decisions, know the associated laws, be aware of relevant research, and be able to define music learning demands and describe the alternative instructional strategies necessary to meet these demands. She suggests teachers insist upon supplementary aids and services but be specific in their requests and able to explain for what purposes the additional resources are needed. These supplemental services may vary from a paraprofessional working directly with the child with special needs, to communication books using a Picture Exchange System, to adapted rhythmic percussion frames for students who have motor coordination challenges. Teachers will be most successful if they determine how the disability affects learning, observe the student, develop appropriate expectations, and then translate this information into

Atterbury (1984a) questions whether chronological mainstreaming in the music setting offers the best benefit for students with learning disabilities. She suggests that students be provided with supplemental or individual instruction. In an article designed to educate learning disability specialists on what music teachers need to better teach students with learning disabilities, Atterbury (1984b) suggests that each teacher have an awareness of the other’s academic and behavioral objectives. This information, along with the music teacher’s knowledge of his or her own music curriculum, provides the framework for designing strategies for successfully integrating learning disabled students into the music classroom.

Techniques appropriate for the music classroom are listed in the Strategies for Teaching the Learning Disabled Child sidebar (part 1 and part 2). Because each child with a learning disability has different strengths and needs, it is imperative for the music teacher to collaborate with the special educator. Based on the information obtained in this collaboration, the music teacher can then implement appropriate strategies. For additional resources available on the Web, see the On-line Resources for the Music Educator sidebar.

It is important for the music teacher facing the challenge of working with children with learning disabilities to realize that the strategies used with learning disabled students are applicable to other teaching situations. Good teaching is good teaching, regardless of the subject matter or the student (Cassidy, 1990). Breaking down each task into sequential steps, ascertaining students’ ability levels, and then helping them make progress are the keys to success when working with all children. Children with special needs just require additional repetitions, prompts, reinforcers, models, learning style options, and response time (Cassidy, 1990).

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Research on Music and Autism Implications for Music Educators
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What is This?
In 1990, the United States Congress amended the Education of the Handicapped Act and introduced notable changes to its original mandate. One of the most meaningful changes was the renaming of the law as the Individuals with Disabilities Education Act (IDEA) (PL 101-476). This change was made in an effort to replace "handicapped" with the term currently regarded as politically correct—"individuals with disabilities." "Handicap" derives from the phrase "cap in hand," reflecting a time when persons with disabilities needed to beg in the streets in order to survive. Because of this history, "handicap" and "handicapped" are regarded as pejorative terms today. The law was also renamed in an effort to illustrate the "person-first" philosophy that calls for referring to the person before the disability—hence, the term "individuals with disabilities."

One of the most consequential changes in the law, however, was the addition of autism and traumatic brain injury to the list of conditions that make students eligible for public education under IDEA. As a result of this change, increasing numbers of students with these types of disabilities have entered the music classroom. Children with traumatic brain injury often have learning characteristics similar to those of children with mental retardation and consequently do not pose the new challenges to music educators that children with autism present. Children with autism have learning characteristics that are unique and complex. The stereotypic behaviors that often accompany the disability can be particularly perplexing. The federal regulations for IDEA include a list of some of the characteristics of the disability:

Autism is a developmental disability significantly affecting verbal and nonverbal communication and social interactions, generally evident before age 3, that adversely affects educational performance. Characteristics of autism include irregularities and impairments in communication, engagement in repetitive activities and stereotypic movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (U.S. Department of Education, 1991, p. 41271).

Autism was first identified by Leo Kanner (1943), a psychiatrist at Johns Hopkins University. The distinctive features that he noted included extreme lack of responsiveness to other people, impairment in verbal and nonverbal communication, insistence on maintaining sameness in the environment, excessive attachment to small objects, certain isolated areas of ability such as excellent rote memory or spatial perception, avoidance of eye contact, and a normal physical appearance. Kanner's original criteria are similar to those included in the Diagnostic and Statistical Manual of Mental Disorders (4th edition) (American Psychiatric Association, 1994) and the behavioral definition provided by the National Society for Autistic Children (1978). These symptoms must be apparent before 30 months of age if a child is to be diagnosed as having autism. This diagnosis is typically made between the ages of 2 and 5 years (Charlop, Schreibman, & Kurtz, 1991).

Autism occurs in approximately 4 out of every 10,000 children (Gilberg, 1984) and is diagnosed four times as often in males as in females. Unfortunately, autism remains one of the major unsolved mysteries of abnormal psychology. It cannot currently be explained by any single cause. While a variety of approaches have been used to treat the disorder, none has proven to be consistently effective (Rutter, 1985). Because of the elusiveness of etiology and the ineffectiveness of treatments, the prognosis is very poor for children with autism. Fewer than 25% of children so diagnosed make satisfactory adjustment by adulthood (DeMyer, Hingtgen, & Jackson, 1981). These bleak data point
to the overwhelming need for continued research. Studies revealing the special receptivity to music exhibited by many children with autism hold great promise for improving the quality of their lives.

**Research on Music and Children with Autism**

Children with autism have consistently shown unusual sensitivity and attentiveness to music (Kanner, 1971; O'Connell, 1974). They often respond positively to music and sound vibrations such as those coming over a radio (Nelson, Anderson, & Gonzales, 1984). Grandin (1988b) showed that children who displayed symptoms related to autism preferred to turn on a speaker that let them hear sung lyrics rather than a speaker that gave them access to spoken lyrics of the same song. Numerous other reports from clinical observations and studies of children with autism have also noted these subjects' special responsiveness to, and unusual interest in, musical stimuli (Applebaum, Egel, Koegel, & Imhoff, 1979; DeMeyer, 1979; Kolko, Anderson, & Campbell, 1980; Sherwin, 1953). In fact, much of the literature on autism reports that children who do not respond appropriately to speech will often respond to music (Provonost, 1961).

Not only do these children seem to enjoy music but they also frequently demonstrate a high level of musical ability. Thaut (1988) reported that many children with autism perform exceptionally well in musical areas compared with most other areas. They even seem to perform unusually well in comparison with many typical children. Many of them learn to carry a tune at a very early age, and they often demonstrate a good sense of rhythm (Oppenheim, 1974). Further, it has been shown that they can frequently imitate pitches as well as or better than children without autism (Applebaum et al., 1979).

Music also seems to have an effect on the ability of people with autism to memorize nonvisual material. Although noted author Temple Grandin was diagnosed with autism as a child, she was able to earn a doctorate in animal science (Toigo, 1992). She attributes her success partly to music and has stated that melodies were the only things she could memorize as a child without a visual image (Grandin, 1988b). Similar responses to music by individuals with autism have been confirmed by other researchers (Alvin, 1978; Hairston, 1990; Michel, 1985; Nordoff & Robbins, 1977; Oppenheim, 1974).

The fact that children with autism display special interest and ability in music has led many researchers to investigate the use of music to modify their atypical behaviors. Burleson, Center, and Reeves (1989) examined the effect of background music on the success of four male children with autism in performing tasks. Each child was given a container of chips in four assorted colors and directed to sort the chips into appropriate color-coded containers. Participants accurately sorted at least 60% more chips when there was music playing in the background than when there was no music. This finding supports the idea that music can increase task accuracy and simultaneously decrease off-task responses in children with autism.

Since most children with autism do not respond to social reinforcers such as praise or affection, Toigo (1992) proposed that music, because it seems to be inherently pleasurable, might be an important motivator or reinforcer. Edible reinforcers rapidly satiate children with autism; however, music appears to produce a high rate of response that is also durable over time (Rincover, Newsom, Lovaas, & Koegel, 1977). This knowledge led researchers to evaluate the success of music in behavior modification treatment plans. Contingent music was used effectively as a reinforcer to eliminate maladaptive and stereotypic behaviors (Jorgenson, 1974) and to encourage participation in various activities that helped improve language, social, or motor functions (Watson, 1979; Staum & Flowers, 1984). Ferster (1962) and Lovaas, Scheibman, and Koegel (1974) also demonstrated the successful use of various behavior modification approaches that employed music to teach children with autism. All of these studies indicate that music can be used effectively as a contingent reinforcer for these students.

According to several researchers (Hargrave & Swisher, 1975; Lovaas et al., 1974), communication is the area that presents the most serious difficulties for children with autism. These children's inability to express themselves verbally is often one of their most obvious problems. Frith (1989) noted that more has been written on the language impairments of children with autism than on any of their other deficits. Many of these children are completely nonverbal or respond verbally only after a great deal of prompting (Watson, 1979). They also often make inappropriate verbal sounds and emit echolalic responses. In fact, at least 75% of those who can speak demonstrate echolalia (Frith, 1989). Kanner (1946) originally summarized the characteristics of the language deficits that these children display: muteness, repetitions, immediate and delayed echolalia, pronoun reversals, word substitutions, and literalness. Since then, researchers have shown that children with autism may show deficits in spontaneous speech (Shapiro, Chiaraminta, & Fish, 1974); verbal, gestural, and motor-imitative skills (Dawson & Adams, 1984; Stone & Lermanek, 1990); initiation of contact with others (Watson, 1979); means-end behaviors (Abrahamsen & Mitchell,
with autism. Improvised music has been used to establish contact with children who had not previously exhibited any type of spontaneous communication (Saperston, 1973). Hollander and Juhrs (1974) helped children with autism participate in a meaningful group experience through the use of improvised Orff-Schulwerk activities. Wolf et al. (1969) used piano and vocal improvisations to encourage, support, and develop the vocal and rhythmic productions of children with autism. In each of these situations, music became a vehicle for communication between the outside world and these previously uncommunicative children.

Nordoff and Robbins (1977) conducted a great deal of research using improvisation with children who had been diagnosed with autism. They developed a technique that stressed using musical improvisations as a nonverbal means of communication between the child and the therapist. They improvised music to reflect the motor, vocal, and instrumental behaviors and responses of a particular child. Their technique encouraged the child to modify his or her behavior in order to control the auditory stimulation that he or she was receiving. The positive effects of this technique have been illustrated by other researchers, as well. For example, Edgerton (1994) found that improvised music was effective in increasing communicative behaviors.

Using music as a reinforcer can improve a number of communication skills among children with autism. Watson (1979) arranged for 10 children who displayed symptoms of autism to be given either tokens or music for spontaneous speech. She found that the greatest increase in such speech occurred during the weeks when music was providing the reinforcement. The idea that music can be effective in reinforcing spontaneous speech was corroborated by Miller and Toca (1979). Similarly, Deutsch and Parks (1978) showed that music was effective in decreasing unsuitable verbalizations while increasing appropriate speech. In addition, researchers have shown that structured music techniques can increase self-expression (Goldstein, 1964; Mahlberg, 1973) and vocal imitation skills (Miller & Toca, 1979; Saperston, 1973). This research suggests that a variety of music techniques can play important roles in addressing deficiencies in the communication skills of children with autism.

**Implications for Music Educators**

The music classroom can provide a positive environment in which students with autism can succeed academically while behaving appropriately. The inclusion of these children in the regular classroom will not be without significant challenges; however, a review of the literature on music and autism suggests that the music classroom can be a productive environment for students with autism. Research indicates that such children usually respond well to musical stimuli and often have musical abilities beyond those of children developing typically. Music teachers can use the natural aptitude for music that children with autism frequently exhibit to highlight their abilities rather than their disability, actively involve them in the subject matter, improve their musical skills, and develop their social relationships with peers.

Music educators often prefer that students with autism come for music instruction as a self-contained group rather than as mainstreamed members of regular classes (Darrow, in press). Many students with autism do not have opportunities to attend classes with their typical peers. In fact, 25% of students with autism are educated in separate buildings or residential facilities in comparison with only 4% of other students with disabilities (U.S. Department of Education, 1997). However, at least one researcher...
subject matter for children with autism is that music provides a nonverbal means of class performance. One of the greatest obstacles to these students’ academic progress is their inability to express themselves verbally. Although most other academic classrooms call on students to participate in words, music allows children with autism to take part without spoken language. Teachers can also assess musical progress without verbal communication.

Social isolation is often a problem for students with autism, whether they are low-functioning or high-functioning. Because of the nature of music, however, students find it difficult, if not impossible, to be isolated in a music classroom. To some extent, each student must attend to every other student in the group if the group is to perform successfully. Thus, the music classroom can serve as a nonthreatening environment in which students with autism and their peers can initiate and maintain communication. In fact, the music classroom is probably the only school environment where social and academic integration of these students can occur relatively easily and naturally. For those students with autism who remain detached, exposure to music education may provide them with appropriate skills that they can also exercise individually.

Since responsiveness to music is a characteristic that many students with autism possess, music is often a subject matter with a potential to reinforce these children’s abilities and minimize their deficiencies. By experiencing the inherent rewards that music participation and performance bring, students with autism may learn that school can be an inviting place.

Previous research on music and children with autism indicates that these students may achieve considerable success in the music classroom. However, most of the research in the past several years has been performed in music therapy settings or other segregated contexts (Bettison, 1996; Clarkson, 1994; Link, 1997; Muller & Warwick, 1993; Wimpory, Chadwick, & Nash; 1995). Since the passage of IDEA has resulted in an ever-increasing number of students with autism entering regular music classes, new research is needed that focuses on the musical abilities of these students within the inclusive music classroom.

References


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**Call for Nominations**

*JRME* and *Update* Editorial Committees and the National Executive Committee of MERC

The National Executive Committee of the Music Education Research Council (MERC) is charged by the Constitution of MENC to seek nominations for vacancies on the Editorial Committees and the Executive Committee as they occur. The Executive Committee consists of one member from each of the six MENC divisions and three members-at-large. The *Journal of Research in Music Education (JRME)* Editorial Committee consists of eighteen members, including an editor. The Editorial Committee for *Update: Applications of Research in Music Education* consists of 11 members, including an editor. Nominations are now being accepted for:

1. Five positions on the *JRME* Editorial Committee and three positions on the Executive Committee (one member-at-large, one representative from the Eastern Division, and one from the Northwestern Division). Qualifications include membership in the Society for Research in Music Education (SRME), documentation of sustained research activity, and a willingness to resign any other national leadership post currently held in SRME (national leadership posts in SRME are defined as national chair of a Special Research Interest Group or membership on the MERC Executive Committee, *JRME* Editorial Committee, or *Update* Editorial Committee). Executive Committee members also must be willing to resign membership on other executive committees of MENC councils or societies. Division representatives on the Executive Committee must belong to an affiliated state organization within the appropriate division.

2. Three positions on the *Update* Editorial Board: one Choral practitioner, one Elementary practitioner, and one Special Topics researcher. Qualifications for researchers match those for members of the *JRME* Editorial Committee. Qualifications for practitioners consist of a record of 3 years of full-time teaching at the elementary or secondary level, continuing interest and involvement in teaching activity that clearly establishes an expertise in the relevant topical division of *Update*, and a record of regular attendance at national in-service conferences of MENC.

All terms of office are 6 years, beginning July 1, 2000. Retiring members of either of the editorial committees or the MERC Executive Committee may not be reappointed to either body until at least 2 years after the expiration of their previous terms. A nominating letter and 12 copies of a complete curriculum vitae should be sent to:

Dr. Wendy L. Sims, MERC Chair  
138 Fine Arts Center  
University of Missouri–Columbia  
Columbia, MO 65211

All nominations must be in written form (letter and accompanying curriculum vitae) and must be postmarked by January 14, 2000.
IEPs in the Band Room:
Successfully teaching students of all abilities
Laura Meehan
Florida State University
laura.meehan08@yahoo.com

2013 NafME National In-Service Conference- October 29, 1:00pm

Questions to ask:
- What abilities does this student already have?
- What does this student want to learn?
- What do I want to teach this student?
- What accommodations are already in place for this student?

Things to consider
with students who have physical disabilities, mental disabilities, and/or social/emotional disabilities:
- Posture
- Sound Production
- Articulation
- Literacy
- Classroom Management

Important information for band directors from the IEP:
- Current level of academia and function
- Annual goals
- Related services and supplementary aids
- How student progress is measured, how goals are documented, & when to reports are given to parents

An IEP means....
- All students with a disability have an IEP
- IEPs are available as a tool to every teacher of that student
- Gives a way for teachers to be consistent with the student
- Lays out the student’s groundwork for success
Resources:


Websites for Adaptive instruments
Ergo Brass: http://www.ergobrass.com
A Days Work: http://www.adayworkmusiceducation.com
Skoog Music: http://www.skoogmusic.com

Websites for Adaptive music
Music Learning Community: http://www.musiclearningcommunity.com

Websites for IEPs and General Disabilities
Council for Exceptional Children: http://sped.org
Exceptionalities Special Research Group: Children with Exceptionalities: https://sites.google.com/site/exceptionalitiessrig/
See My IEP: http://www.seemyiep.com


University of Texas, Center for Music Learning- Disabilities Information: http://cml.music.utexas.edu/online-resources/disabilities-information/introduction/

Great Music iPad apps for Students with Disabilities
DoReRhym (featured in presentation), by: Stacey Jett- Free
Music Intervals, by Foriero- Free
Music Tones, by Foriero- Free
Music Tutor, by JSplash Apps- Free
My Note Games, by Appatta Ldt.- Free