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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 in music. 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!

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education that both honors and meets
the needs of students who require spec-
ial education services.

**Disability Rights: A Background**

In the last quarter of the twentieth cen-
tury, 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 individu-
als regardless of their race. In the 1970s,
disability-rights advocates lobbied to
extend those laws to individuals with
disabilities. For example, in 1973, Con-
gress 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 pro-
vided equal opportunities and access
to employment, government programs,
public spaces, and transportation.

Congress also passed laws on educa-
tion. The Education of All Handicapped
Children Act of 1975 (EHA) required that
schools provide a free, appropriate pub-
lic education that allowed the maximum
possible opportunity to interact with stu-
dents 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 physi-
cal disabilities entering college. Congress
reauthorized EHA in 1990 and renamed
it the Individuals with Disabilities Educa-
tion Act (IDEA). This act expanded EHA's
definition of disability to include more stu-
dents who would qualify under the law.
EHA and IDEA also established the “Indi-
vidualized Educational Program” (IEP),
which required schools to create a docu-
ment 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, teach-
ers, and students. It has led to a larger
movement of “inclusion,” where indi-
viduals with disabilities were afforded
greater rights and integration into soci-
ey. 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 mod-
ify instruments, devise alternative ways
of instructing, and alter rehearsal sched-
ules and lesson plans. However, with
this added responsibility comes a richer
experience for all students, because the
increased diversity of learners has posi-
tive 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 neces-
sary, alone, they are insufficient. In addi-
tion, they believe it important to question
the social stigmas and “unofficial” barri-
ers 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 cre-
ate an inferior status for those with disa-
bilities. While state and federal laws have
specific definitions that educators must
legally follow when creating IEPs and ser-
dices for students, looking at disability’s
taken-for-granted definition can show
other subtle ways discrimination persists.

As educators become aware of this sub-
tle discrimination, they can appropriately
modify their teaching to better meet the
needs of their students.

Some disability-rights advocates
argue that disabilities are most com-
monly 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 medi-
cally defined as a person whose best-
corrected vision is 20/200 or lower. In
this definition, the disability is consid-
ered a problem with the eyes. On this
basis, there is an attempt to rehabili-
tate 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, prob-
ably seems familiar and commonsen-
sical. The medical model serves as the
cornerstone for laws and special educa-
tion in the United States and other indus-
trialized 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 disa-
bled” in society today. Therefore, rather
than use a medical descriptor, they pre-
fer to use what they call a social model
disability, which defines disability not as
a limitation of the body or mind but as a
social position.

To show the difference between dis-
ability as a medical condition and dis-
ability as a social position, some scholars
make a distinction between an impair-
ment and a disability. In his book Bend-
ing over Backwards, Lennard J. Davis
writes,

Impairment is the physical fact of lack-
ing an arm or a leg. Disability is the
social process that turns an impair-
ment into a negative by creating barri-
ers to access. An impairment involves
a loss or diminution of sight, hearing,
mobility, mental ability, and so on. But
an impairment only becomes a disabil-
ity when society creates environments
with barriers—affective, sensory, cog-
nitive, or architectural.

Architectural design is the clear-
est example of Davis’s idea. If someone
must use a wheelchair, that person’s legs
are impaired. When ramps are installed
Resources for Educators Seeking to Adapt Musical Instruments and Make Other Accommodations for Students

### Resources for Adapting Musical Instruments

#### One-hand piano repertoire:
- [http://www.cello.org/heaven/disabled/piano.htm](http://www.cello.org/heaven/disabled/piano.htm)
- [http://pianoeducation.org/pnoonhnd.html](http://pianoeducation.org/pnoonhnd.html)

#### Modified instruments:
- [http://www.dolmetsch.com/goldseriesrecorders.htm](http://www.dolmetsch.com/goldseriesrecorders.htm)
- [http://onehandwinds.unk.edu/toggle_key.htm](http://onehandwinds.unk.edu/toggle_key.htm) (Saxophone)

#### General resources on choosing and modifying instruments:
- [http://www.livingmysong.org.uk/choosingsinstruments.htm](http://www.livingmysong.org.uk/choosingsinstruments.htm)
- [http://www.uca.edu/teacherresources/musiceducators/musicEducation/resourcepages/Adaptation/Adapt.html](http://www.uca.edu/teacherresources/musiceducators/musicEducation/resourcepages/Adaptation/Adapt.html)
- [http://www.brl.org/index.html](http://www.brl.org/index.html) and can download free software to translate standard notation into braille at [http://delysid.org/freedots.html](http://delysid.org/freedots.html).
- [http://www.flutelab.com/braille.html](http://www.flutelab.com/braille.html)
- [http://www.uca.edu/teacherresources/musiceducators/musicEducation/resourcepages/Adaptation/Adapt.html](http://www.uca.edu/teacherresources/musiceducators/musicEducation/resourcepages/Adaptation/Adapt.html)
- [http://www.cello.org/heaven/disabled/piano.htm](http://www.cello.org/heaven/disabled/piano.htm)

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**FIGURE 1**

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

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.12 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.12 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 in another form. Teachers can register for a free online course to learn the basics of braille notation at [http://www.brl.org/index.html](http://www.brl.org/index.html) and can download free software to translate standard notation into braille at [http://delysid.org/freedots.html](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
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.\(^{13}\) 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.\(^{14}\) 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.’”\(^{15}\) 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—kinesthetic, 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.\(^{16}\)

### 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.\(^{17}\) 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?” Figure 2 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.\(^{17}\) 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?” Figure 2

#### FIGURE 2

**Some Examples of People-First Language**

<table>
<thead>
<tr>
<th>Instead of . . .</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>She 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>She is wheelchair-bound.</td>
<td></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>National Education Association page on legislation, <a href="http://www.nea.org/home/16348.htm">http://www.nea.org/home/16348.htm</a></td>
</tr>
<tr>
<td><strong>Arts Education:</strong></td>
</tr>
<tr>
<td>The International Organization on Arts and Disability of the Kennedy Center, <a href="http://www.kennedy-center.org/education/vsa/">http://www.kennedy-center.org/education/vsa/</a></td>
</tr>
<tr>
<td>The National Arts and Disability Center, <a href="http://www.semel.ucla.edu/nadc">http://www.semel.ucla.edu/nadc</a></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 more inclusive. Appealing to different models of disability and paying careful attention to language can help establish teaching that is 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.


10. For video of a violinist playing with the use of one arm, see http://www.youtube.com/watch?v=SYmQg5XznEm&list=FLvCP1k6_h6mg6bQZajplcQ&index=4.


15. Ibid., 147.


Inclusive Music Teaching Strategies for Elementary-Age Children with Developmental Dyslexia
Elizabeth Heikkila and Andrew Knight
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DOI: 10.1177/0027432112452597

The online version of this article can be found at:
http://mej.sagepub.com/content/99/1/54
A teacher with a little knowledge about dyslexia can make a positive difference in young people’s lives. Check out these strategies to start educating yourself and helping your students.

The International Dyslexia Association (www.interdys.org) suggests that 15 to 20 percent of the world’s population has some form of dyslexia. The three main forms of dyslexia in children include developmental (the focus of this article), primary, and trauma dyslexia. While trauma and primary dyslexia are significant barriers that are caused by brain trauma and dysfunction to the cerebral cortex, respectively, developmental dyslexia (DD) is most often seen in inclusive classroom environments and is more likely overcome with proper treatment and educational accommodations. Subtypes of dyslexia are based on the function of the person, which means the dyslexia manifests itself aurally (phonological), via writing (dysgraphia), or in motor development (dyspraxia).

One common myth about dyslexia is that it is a specific disorder that results in reading English words right to left or solely as a temporary jumbling of letters in a word that leads to confusion. Dyslexia may also be misunderstood as a global delay in literacy skills, or it may be a “scapegoat” diagnosis for children who are seen as “less intelligent” than average. Educators need to be aware of such incorrect information in order to provide the...
least restrictive environment for all students. “Least restrictive environment” is part of the Individuals with Disabilities Education Act (IDEA) and means that all students with special needs should be educated with their peers to the greatest extent possible.

Music educators are in a unique position to be of great help to those students who exhibit dyslexic characteristics, because music is a unique sensory stimulus. Particular accommodations in music education classrooms and lesson plans could be very helpful to this population but may not be widely understood or used. There are several reasons music educators may feel unprepared or lack the knowledge to teach this group of students, although most students with DD are in inclusive classrooms for classes such as music, art, and physical education. College curricula may be limited in the amount of special education training included in an undergraduate program. Once graduated, music educators may not be involved or invited to attend inservices or conferences that address special needs or may choose to attend sessions that focus more on general classroom or music-specific issues. Some music educators might work with special educators or music therapists who can work with a particular student or group of students in or out of the music education classroom, thus sparing the music educator from having to work in isolation on how to accommodate students with DD.

Another issue for all professionals working with children with DD is difficulty parsing out practical implications from high-quality research and subsequent dissemination. Recent research about the relationship between music and DD may be confusing and seem inapplicable to music education, specifically. Furthermore, few articles specific to music and dyslexia refer to high-level meta-analyses or content analyses, which would help to better form consensus opinion on issues around DD. Katie Overy, a music cognition researcher at University of Edinburgh in Scotland, published two studies that indicate musical training can benefit children with dyslexia. A year of vocal-based music lessons helped six-year-olds increase scores on phonological and spelling tasks, and fifteen weeks of similar instruction aided eight-year-olds in rhythm copying, rapid auditory processing, phonological skills, and spelling.

Furthermore, a team from Beth Israel Deaconess Medical Center and Harvard Medical School suggested that improved pitch and rhythmic auditory processing “may be successful at remediating some of the behavioral and neural correlates of developmental dyslexia.” Given these results, implications for music educators, while not spelled out, merit further consideration as to the importance of music education for children with DD.

Neither of the above articles found specific improvements from musical intervention on reading skills. One recent article by José Morais and colleagues attempted to discredit music therapy as a plausible intervention for reading skills. Music therapy and music education share the unique sensory stimulus of music, so one might wonder how therapy may not serve the child as well as musical instruction. However, the authors conflated music therapy with musical instruction. This conclusion might lead a music therapist or music educator confused as far as implications for helping children with DD in a variety of ways despite previous research that shows promising connections between music and dyslexic cognitive processing.

While efficacy of specific interventions using music to improve the lives of people with dyslexia are not yet confirmed by the research, it is clear that music educators will have many children with DD in the classroom and need to learn how to teach them with best practice. The purposes of this article are to better describe children with DD and offer teaching strategies for music educators to assist students with DD in the music classroom. Please note the use of person-first language throughout this article in describing disabilities and disorders, and try to practice this in your daily work. Also consider mentioning the disability in students’ Individual Education Program (IEP) meetings as opposed to in the classroom. The students, not their conditions, should be the focus.

Dyslexia, the “Hidden Disability”

Dyslexia has traditionally been an umbrella term for people who process cognitive information differently. Thomas Richard Miles pioneered the effort, especially in the 1960s and 1970s in the United Kingdom, to have administrators recognize DD as a disability that requires full special education accommodation. His work as a psychologist led to the founding of the journal Dyslexia and pinpointed several areas for screening children with learning difficulties. More recent neurobiological research has found several symptom areas to look for, depending on the age of the child. (See Table 1.) Preschool-age children are not typically diagnosed with DD, but speech delays, language difficulties, and reverse (or “mirror”) writing can be early signs of DD. Elementary/primary school–age children may exhibit a longer list of more diverse symptoms, including sound and written/reading issues. Sound issues include difficulty differentiating sound parts in words, such as “yurgot” for yogurt, and matching words that rhyme by sound. Other evidence of DD may include difficulty reading and spelling, and general disorder of expressive communication skills, sometimes termed auditory processing disorder.

Children with DD may also experience temporal processing disruption. This neural aberrancy may manifest itself in a variety of symptoms that can range from mild to severe and often include issues with single-word decoding, short-term memory, and motor skills and sometimes auditory and visual perception deficits. Nina Kraus and Bharath Chandrasekaran, researchers in communication and auditory processing, posit musical training/education and typical speech-language pathology treatment as side-by-side components to assist children to overcome any learning disabilities due to DD. People with musical training can better distinguish conversation from background noise (the confusion of the two is a particular symptom of DD). At the least, they suggest that music is a “value-added proposition” that
links training of the neural mechanisms through listening and movement with an activity that provides enjoyment. DD is as much a language and timing issue as it is a visual issue, and likely even more. The disability manifests not only in students’ and adults’ language and reading skills but also in reading music symbols, which may be considered another kind of “language” that requires interpretation. This transference may be due to the abstract nature of music symbols along with the need for reading skills, such as tracking left to right. Another effect might be short-term memory difficulties, which could, for example, impair students’ abilities to memorize lyrics for a choral concert.

Gavin Reid refers to DD as the “hidden disability,” as it is not always recognized until children are put in a situation that requires literacy skills or processing certain kinds of information. In the book *Dyslexia and Inclusion: Classroom Approaches for Assessment, Teaching, and Learning*, Reid warns against educators prejudging a student’s behaviors as laziness instead of as a masked disability. Due to its concealed nature, DD may result in psychological symptoms, such as low self-esteem, high anxiety, and learned helplessness in the classroom. Educators need to be aware of each child’s abilities to ensure that children with DD are provided assistance from an early age, as early intervention will help our students be more successful.

### Music Classroom Inclusion

#### Placement

Once a child has been diagnosed with or believed to have DD, there are several inclusive teaching strategies to help the individual experience more success within a music classroom. Understanding that the brain of a child with DD processes information differently allows educators to make modifications in both teaching and classroom arrangement. Since a child with DD may struggle with concentration, placement within a classroom should be planned carefully. Situate the student in the front of the class away from distractions, such as talkative students or classroom decorations. In a general music environment, place the child next to a strong and helpful singer. Through this minor adjustment, the musically strong child can assist his or her peer with musical activities, lyric memorization, classroom procedures, and instrument care.

### Written Materials

When using printed music and/or lyrics, there are several steps you can take to ensure a higher level of success for all students without singling out those with DD. The following suggestions are offered with an elementary/middle school general music or chorus class in mind. First, make certain the text is clearly visible, and enlarge it for added legibility. Print the lyrics on light-colored pastel paper; black against white is more difficult to read due to glare. For added comprehension and readability, involve students in coloring lyric sheets by highlighting verses and refrains very lightly to maintain word legibility. Ask children to use the same colors for marking these things to avoid confusion—you might make this an inclusive part of preparing for a concert. After they have done the coloring, walk the students through the “road map” of the piece by following the colors. Subsequently, musical form can be discussed by applying the same colors in every piece and by locating patterns.

The recent addition of interactive whiteboards in many classrooms provides educators with a unique and exciting way to augment their lessons. Interactive or electronic whiteboards were first used in office settings, but are becoming more common in classrooms in the United States and United Kingdom. Reading music from the same visual source (and therefore combining correct aural and visual input) is a teaching technique to help all students focus their attention and understand the concept being presented. Music educators can rehearse left-to-right visual tracking with the lyrics or notes on the board to improve tracking behaviors or use musical programs that highlight the notes and verses as they occur within the music. Magnetic notes also make a good addition for teaching pitch relationships and contour. Using large versions of notes

---

**TABLE 1**

<table>
<thead>
<tr>
<th>Area</th>
<th>Preschool (2–4 years)</th>
<th>Early Elementary/Primary (4–7 years)</th>
<th>Middle Elementary/Primary (7–10 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech</td>
<td>Delayed verbalization</td>
<td>Differentiating or “switching” sounds within words</td>
<td>Diagnosis of auditory processing disorder (may receive speech-language pathology services)</td>
</tr>
<tr>
<td>Cognition</td>
<td>Impaired visual tracking</td>
<td>Difficulty reading and spelling</td>
<td>Difficulty reading and spelling</td>
</tr>
<tr>
<td>Physical</td>
<td>Reverse writing; delayed walking, motor skills deficits</td>
<td>Dysgraphia (difficulty writing or typing) or other fine motor deficits</td>
<td></td>
</tr>
</tbody>
</table>

---

1. *Gavin Reid* refers to DD as the “hidden disability,” as it is not always recognized until children are put in a situation that requires literacy skills or processing certain kinds of information.
2. Gavin Reid warns against educators prejudging a student’s behaviors as laziness instead of as a masked disability.
3. Due to its concealed nature, DD may result in psychological symptoms, such as low self-esteem, high anxiety, and learned helplessness in the classroom.
4. Educators need to be aware of each child’s abilities to ensure that children with DD are provided assistance from an early age, as early intervention will help our students be more successful.
5. For added comprehension and readability, involve students in coloring lyric sheets by highlighting verses and refrains very lightly to maintain word legibility.
6. Ask children to use the same colors for marking these things to avoid confusion.
7. Interactive or electronic whiteboards were first used in office settings, but are becoming more common in classrooms.
8. Reading music from the same visual source is a teaching technique to help all students focus their attention and understand the concept being presented.
9. Interactive or electronic whiteboards were first used in office settings, but are becoming more common in classrooms.
10. Magnetic notes also make a good addition for teaching pitch relationships and contour.
(with or without rhythm “flags,” depending on the objective of the lesson) can be used with an interactive whiteboard, with a regular (slate) chalkboard, or even on a floor for students to manipulate and physically move their bodies left to right to simulate reading in this manner. In other instances, the staff might be introduced as a series of colored steps, perhaps with milk crates or even in a stairwell, to mimic a verticality of thought. To better support learners with DD, introduce only one staff line and corresponding space at a time.

**Multisensory Teaching**

**Rhythm and Rhythmic Dictation**

Teaching rhythm to children can be very difficult, yet even more challenging to children who have DD, due to inherent temporal issues. However, through multisensory strategies, such concepts may be learned more easily. The first step is learning to feel the beat. Many children will naturally approximate the beat of a song, but if a child is having difficulty, try using pieces with a very strong beat, such as a march. You may also place a child next to children who already can demonstrate the beat on their lap or instrument. One useful strategy is to use poetry as spoken chant. Begin by having students use the rhythm of a popular poem or make one up using their group creativity. Have them clap the strong beats while you recite a poem in time and then out of time to have them feel the differences in the two versions. A more difficult adaptation for older children might include clapping the rhythm of the words with the group’s chanting and then out of time. Show them how a correct rhythm may still not sound right with differing tempi. This also reinforces terminology that is often confused (e.g., tempo, pulse, rhythm).

The following activity teaches note values and how they relate to the beat by addressing the needs of visual, aural, and kinesthetic learners. Although many music educators have used this type of a “chair game,” these tweaks have produced good results and are examples of using existing strategies that are not too complicated and do not single out students with DD but instead offer inclusive learning methods.

Begin with four chairs. Place them in a straight line, side by side, leaving a little space between each chair. Each chair represents one beat in a measure containing four beats. Draw the number 4 on the board followed by four horizontal lines. End the measure with a double-bar line. The 4 visually signifies the number of beats in the measure, while the four lines symbolize the four beats, as shown below:

```
 4 _ _ _ _ ||
```

Next, use the four large chairs, lined up side to side, as beats. Clap a four-beat rhythm behind the chairs, making certain to move your body behind each chair as the beat occurs. For instance, “one, two and three,” means one clap behind chairs one and four, and two eighth-note claps behind chairs two and three as you walk behind them in a given tempo. Count yourself off so they hear the tempo before your claps. Beginning with only quarter notes and eighth notes is sufficient. You might want to make a quick game between you and the class to ensure that most of the group understand the pattern of claps per chair. After clapping twice or more over the chairs alone, invite the children to join you. When the pattern is established, ask a child to tell how many sounds occurred behind the first chair. Once the correct answer is offered, have the child sit in the chair to physically represent the sound. If eighth notes were used, have two children share the chair (hence, the “large” chairs). After all chairs are filled, have all students clap the pattern again, noticing how each person signifies a sound. Then transfer the sounds onto a chalkboard or whiteboard with your choice of notation. Finally, clap the pattern again while moving your hand below the notes as they occur. By teaching rhythm using this method, all children are simultaneously taught visually, aurally, and kinesthetically.

**Rhythmic and Melodic Ostinati**

Assisting children with DD and their classmates can be done using multisensory instructional methods. If you have considered differentiated instruction within your classroom, adding these instructional methods might aid you in teaching your entire class. Differentiated instruction refers to using several methods of teaching within a curricular lesson or even a class period and may include considering levels of ability of the students in a particular classroom environment. Students with DD may have trouble associating a sound as being “higher” or “lower” due to the abstract nature of this concept. One strategy that may help teach this vertical “feel” of pitch is to project the notes on an overhead or whiteboard. Have the children use their hands to follow the motion of the notes as you point and sing at the same time. The “higher” you climb on the staff, the higher your hand moves, and the higher your voice sings. Children learning to associate written notes and pitches with physical height on their body may help them “feel” the vertical distances of different notes easier. Once students are comfortable associating pitches with varying heights on their body, begin teaching the concept of notes on the staff. This is an example of emphasizing proprioception, which may be understood as a person’s sense of his or her body movements in space as they relate to a fixed point. This use of proprioception may be considered a third stimulus (in addition to auditory and visual) and can help overcome the physical barriers of children with DD.

When your students are ready to learn longer melodies and/or melodic ostinati, utilizing the same method may aid in their understanding as well. For instance, when teaching a melodic ostinato, start by notating the rhythm of the ostinato and clapping it. For the rest of this concept, consider “Hot Cross Buns” in the following example. Once the class has a solid rhythmic understanding of the ostinato, indicate pitches by placing the notes of the rhythm at different heights on the board. Assign each
pitch to a different part on their body according to the written pitches. Then have the children tap the correct area on their body, in rhythm, while singing the name of the associated body part. For example, if your ostinato consists of the notes G, A, and B, every time they sing a B, have them pat their head and sing the word head; for an A, tap their arms and sing arm; and for a G, touch their lap. Informal, real-time assessment of the group as a whole is critical to using this technique. Educators must develop a feel for ensuring a “rhythmic consensus” with few or no students who need a few more repetitions until accuracy. Using physical motions helps us assess this. Next, practice the ostinato along with the accompanying music (without pitches). In following lessons, place the notes on different levels and model singing the correct pitches, singing the corresponding body part and moving your hands either higher or lower on your body (see Figure 1).

The example in Figure 1 would be read aloud as “head, arm, lap” | “head, arm, lap” | “lap, lap, lap, lap, arm, arm, arm” | “head, arm, lap” | . Next, add (or swap, depending on your assessment of how the group is responding to this method) the note name to the appropriate rhythmic designation.

Again (see Figure 2), speaking the rhythm with notes instead of rhythmic designations would sound like “B, A, G” | “B, A, G” | “G, G, G, G, A, A, A, A” | “B, A, G” | . Staff lines may be added after this step is practiced. Finally, transfer to available instruments in your classroom, such as the glockenspiel or keyboard. This final step is key to ensuring carryover from the abstract concepts to the concrete performance aspect of the lesson.

While it might seem like a lot of layers of information to put to children, this breakdown of tasks might help them analyze the cognitive tasks before them in a more structured way. Even if the child does not fully understand one layer, it is likely that success at a later step will clarify the concept as a whole by the end. Specifically, we have found this method to be helpful with students with a variety of abilities, including DD, Down syndrome, and hearing and vision loss. Using this process will likely help all students feel the verticality of the notes, experience the rhythm in their hands, improve their motor skills, add to their understanding of the music, and allow you to create smoother transitions to pitched instruments.

**Color Staff**

Since children with DD tend to have difficulties tracking from left to right without their gaze shifting, music educator Margaret Hubicki created the color staff, which includes a method and materials. Her goal through using the color staff was to help people read music by connecting a color to each space or line of the grand staff. Hubicki’s concept is based on a student seeing where a sound “belongs” and feeling the location of the note by using movable symbols and raised staff printing.

For educators who may not have Hubicki’s color staff, there are alternative ways to use her idea. For example, begin with the five-line staff or a piece of music and color the spaces using various crayons. Ask the students to color very lightly and use the same color on each space to avoid confusion. When presenting a melodic line on the treble clef, four colors are sufficient if the melody does not use ledger lines. Modifications can be made to include ledger lines when needed.

Another approach to helping children remember letter names for notes, besides using the mnemonic device “every good boy does fine,” is based on using the color staff. For instance, have children begin coloring the staff by starting on first space, F, using green. Then in succession, instruct students to work their way up the staff using red, blue, and, finally, yellow on the top space. One of the authors created this mnemonic device with her students for each color or note as follows: F symbolized “field” green; G stands for the “Grinch” who stole Christmas, as G touches both green and red; A is “apple” red; B can be “beautiful” America, as it touches red and blue; C may be phonetic for “sea” blue; and so on. Use your imagination, and remember to involve your class in
Resources on Dyslexia and Music

- The International Dyslexia Association: www.interdys.org

Several of these textbooks also include a helpful overview of IDEA for educators and therapists. For more on IDEA, visit http://idea.ed.gov.

Finding Success

To make the greatest use of our time assisting children diagnosed with DD, it is essential to understand the condition and methods that may help these students find success. As music educators, gaining more understanding and knowledge of DD can assist us in providing differentiated instruction in our classrooms. In some ways, differentiated instruction might be compared to the therapeutic approach of a music therapist or audiology/speech professional. Both take a very individualized approach to instruction, but in different physical environments with different professional-to-student ratios. The necessity of gaining additional adaptive teaching skills and a greater familiarity with DD is essential due to the high prevalence and nature of the condition. Moreover, using alternative music teaching strategies may not only help students with DD understand and enjoy music but also provide all children with a comprehensive music education. Additional awareness, education, and effective lesson plans may be the key that opens the door for improved creativity, musicality, and literacy in children with developmental dyslexia.

Notes

12. Bender, *Differentiating Instruction*.
15. Reed, *Dyslexia and Inclusion*.
16. Ibid.
17. Smith et al., “Interactive Whiteboards”; and Baker, “Smart Board in the Classroom.”
22. Ibid.
Including Special Learners: Providing Meaningful Participation in the Music Class

Victoria S. Hagedorn

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What is This?
Including Special Learners: Providing Meaningful Participation in the Music Class

By Victoria S. Hagedorn

Victoria S. Hagedorn is a music teacher at Walsingham Elementary School in Pinellas County, Florida.

It is common practice for music educators to be responsible for teaching students with special learning needs who have been included in the general education classroom. According to Sobol, “Music educators need to be sure that if a student is mainstreamed into the music program, all accommodations applicable to the program are met for successful inclusion” (2001, p. 9). But how do music teachers know if they are providing meaningful instructional experiences for these children?

Hammel suggests that one of the top ten considerations for students mainstreamed in the music program is for the music educator to access Individual Education Plan (IEP) summaries or profiles on all special learners in their classes (2004). She further advises the music educator to ask a special education staff member to assist with reviewing the profiles and navigating around the alphabet soup of acronyms associated with special education. In addition, she recommends that the music teacher review the behavior management plans in place for the special-needs students, as well as what curricular adaptations are suggested on the IEP along with how the students can best participate (e.g. alone, with an assistant, with a peer). Following are a few questions to guide the music educator toward providing meaningful musical experiences for special-needs students in their classrooms.

What is the IEP?

The IEP is a planning document that guides placement decisions and instruction for students with disabilities. The IEP describes in writing the student’s strengths, areas in which the child may need special assistance, the educational goals for the student, and objectives the child must attain to reach those goals. Further it provides information about who will assist the student in successfully completing his or her goals, services that must be provided to the student, ways the child will take part in the general education program in the school, a date when such activities will be completed, and how the plan will be evaluated.

Adamek (1998) stated that while the procedure for actually writing the IEP varies among school districts, these mandates must be met:

1. Assessment information about the child’s current level of functioning
2. Long and short term goals and objectives for the student
3. Plans for initiating services and the duration of each
4. Plans for providing specific educational services and to what extent the student will be involved in general education.

5. Criteria for evaluating the student’s progress.

“All professionals who are involved with the student are expected to participate in some level on the written plan and/or at the annual evaluation meeting” (Adamek, p. 8).

How will I implement student participation from the IEP?

First, the music teacher will need to gather information about the student and organize it in an effective way. Start with the IEP and create a student profile (see figure 1). This would be the appropriate time to ask another colleague for assistance in reading the IEP, as suggested by Hammel (2004).

Second, focus on how the IEP learning priorities can be fit into instruction throughout the day. In the case of the music classroom, one can create a list to see where the learning needs of that child can be met within the music curriculum. Third, plan your instruction to meet the child’s learning needs. You will need to decide how the student will participate and provide the necessary accommodations or modifications to the music curriculum. Finally, you will want to evaluate the impact of the student’s participation in the music program by assessing and documenting student progress (see figure 2).

An example

There are a variety of ways to structure a student profile, but for the purposes of this column we will use one developed by Beech and colleagues (2002) as seen in figure 3. The student, “Susie,” is a primary-age child with special learning needs. She is mainstreamed or included full time in a general education class and comes with that class to music each week. A review of her IEP reveals that she needs to improve her fine motor skills, be provided with age-appropriate activities, and be encouraged to view and enact social skills.

How can we accommodate her general learning goals during music instruction? She will need modeling of music activities to participate. Therefore, the teacher will have to demonstrate through gestures, pictures, and movement the tasks Susie is to complete. The music teacher will find it necessary to provide opportunities for repeated instruction. For example, the teacher will want to repeat directions and song material and give many practice opportunities for playing the classroom instruments. It may be necessary for Susie to have her hands positioned by the teacher for her to hold instruments or other manipulatives. She may require hand-over-hand assistance from the teacher in playing classroom instruments. The teacher will want to think about and choose an appropriate peer who will model good social skills to sit next to Susie. Susie and the teacher will communicate through pictures and gestures as she approximates words and verbal language.

How will I know if the instruction I am providing is meaningful?

Applying the rubric from figure 2 (Beech, et al. 2002), we can see that Susie is participating successfully based on information gleaned.
from the IEP. She is learning priority skills in the music setting, which occurs naturally for all kindergarteners. Susie is interacting with nondisabled peers, and her learning goals are meaningful in the music context. Furthermore, she is participating in various groupings (whole-class, partner, individually) and has been provided accommodations to help her participate, such as assistance via pictures, gestures, help with manipulating objects. (See figure 4).

Applying the scoring rubric, we see that Susie scores in the 3–4 range. This indicates that she is actively engaged in learning at the kindergarten level and is making progress towards her IEP goals and objectives. She is meaningfully participating in the music program at this time.

**Summary**

With some extra work on the part of the music teacher, students with special learning needs can have meaningful experiences in the music classroom that can be verified. It does take extra effort on the part of the music educator to research the student’s IEP and make the profile, but the child as well as the teacher will benefit from such an undertaking.

**References**


### Student Profile

<table>
<thead>
<tr>
<th>Name:</th>
<th>Age:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Teacher:</td>
<td></td>
</tr>
<tr>
<td>Learning Priorities (goals)</td>
<td></td>
</tr>
<tr>
<td>Student strengths/interests</td>
<td></td>
</tr>
<tr>
<td>Accommodations/Modifications</td>
<td></td>
</tr>
<tr>
<td>Behavior support strategies</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>Health/Other</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Rubric indicators

To what extent does the student’s instruction ensure meaningful participation? Indicate the degree to which each of the indicators is observed by marking the appropriate box.

<table>
<thead>
<tr>
<th>Meaningful Participation Indicators</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The student’s participation reflects information from his/her IEP and other sources.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The student is learning IEP priority skills throughout the day.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Skills are learned in setting in which they would naturally be used.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The student has opportunities to interact/learn with nondisabled peers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. The learning goals are meaningful for the student now and in the future.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. The student participates in varied instructional groupings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Accommodations/modifications are provided as necessary.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. The student is actively engaged in learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Activities/materials are age-appropriate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Student progress towards IEP goals/objectives is measured and documented on a regularly scheduled basis.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- If most boxes checked are in columns 0/1, there is little evidence of meaningful participation.
- If most boxes checked are in column 2, you need to think how you can increase the degree of meaningful participation.
- If most boxes checked are in columns 3/4, the child is participating meaningfully in instruction.

## Student Profile

<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th>Susie</th>
<th><strong>Age:</strong></th>
<th>6</th>
</tr>
</thead>
</table>

**Classroom Teacher:** Mrs. XYZ

### Learning Priorities (goals)
- Increase language skills
- Increase visual understanding (id. letters, musical notation)
- Improve fine motor skills
- Provide age-appropriate activities
- Work on social skills

### Student strengths/interests
- Friendly
- Motivated
- Cooperative
- Imitative

### Accommodations/Modifications
- Provide modeling to the student
- Provide repeated instruction
- Assist in positioning in order to hold instruments
- Seat next to appropriate peer
- Give hand-over-hand assistance as needed

### Behavior support strategies
- None listed on IEP

### Communication
- Uses some PECS (Picture Exchange Communication System)
- Uses gestures
- Approximates words

### Health/Other
- Comes from family that speaks a language other than English

---

Adapted from Fisher, Frey, and Sax, 1999, *Inclusive Elementary Schools* for the Meaningful Participation Workshops by the Florida Department of Education.
Figure 4. Rubric for "Susie" in music class

To what extent does the student’s instruction ensure meaningful participation? Indicate the degree to which each of the indicators is observed by marking the appropriate box.

<table>
<thead>
<tr>
<th>Meaningful Participation Indicators</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The student’s participation reflects information from his/her IEP and other sources.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The student is learning IEP priority skills throughout the day.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Skills are learned in setting in which they would naturally be used.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The student has opportunities to interact/learn with nondisabled peers.</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. The learning goals are meaningful for the student now and in the future.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6. The student participates in varied instructional groupings.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7. Accommodations/modifications are provided as necessary.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>8. The student is actively engaged in learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<td>9. Activities/materials are age-appropriate.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

- If most boxes checked are in columns 0/1, there is little evidence of meaningful participation.
- If most boxes checked are in column 2, you need to think how you can increase the degree of meaningful participation.
- If most boxes checked are in columns 3/4, the child is participating meaningfully in instruction.

Resources, Research, and Reviews: Music in Rural Zimbabwe: The Chaminuka Effect
Natalie Jones Kreutzer
*General Music Today* 2001 15: 16
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What is This?
Music in Rural Zimbabwe: The Chaminuka Effect

By Natalie Jones Kreutzer

Recently publicized research in human cognition suggests a connection between musical training and improved spatial-temporal ability, especially among preschool children. The observed phenomenon of enhanced abstract reasoning resulting from listening to or studying music has been dubbed “the Mozart effect” by some educators and therapists in the United States (Campbell, 1997). For eons, human communities without access to empirical measurement have intuited the efficacy of music for education. In many cultures, music has been a primary mode of enculturation. This article describes some of the music taught to children from birth through seven years of age among the Shona-speaking people of rural Zimbabwe.

Music Education in the Shona Culture

Since Zimbabwe’s independence in 1981, one objective of the Ministry of Education and Culture has been to resurrect its people’s musical heritage. Traditional children’s singing games have been incorporated into the country’s primarily British-style curriculum. In the communal lands, local women without formal teaching credentials are often in charge of the creches (preschools). Under their tutelage, children spend the majority of the school day in musical play. Practice of kinesthetic skill is prominent. Nearly all their games employ movement intended to develop dexterity and coordination. Embedded in the games are the information, skills and attitudes valued by the Shona-speaking community. Singing or chanting accompanies these games. New songs have been created to teach modern concepts and to help make connections to the English language. Old songs that teach pre-Colonial knowledge remain in the repertoire as well.

In regions that rely on oral tradition, music has often been a primary carrier of knowledge. There are musical chronicles of historic events and genealogies. Songs and sung stories convey the mythology, morals, rules, and practices of the culture. During the 1950s, a Rhodesian medical doctor, Michael Gelfand, collected information on the curriculum used in Shona-speaking children’s upbringing. He summarized, “The child’s reasoning powers are developed through learning proverbs, riddles, playing games, listening to stories, and taking part in the many songs sung by their people” (preface, 1979). A practice of both rural and urban families was to send toddlers to live for two to three years with their maternal relatives. In this situation, early enculturation was the responsibility of the grandparents, and they accomplished it through the traditions received from their own elders. The musical activities cited by Gelfand...
likely originated at least two generations previously, near the turn of the last century. Many of the same songs and games are played by children in Zimbabwe today.

Only in the last twenty years or so has science begun to uncover the physiological reasons for the efficacy of instructional methods that have been employed for centuries. The capacity for imaging the brain of a living person through technology such as MRI and PET scans has stimulated research in the disciplines of neuroscience and psychobiology. It has been observed that learning activates the multiplication of synaptic connections between brain cells in live brains. The presence of these connections enables people to think and solve problems. New learning or stimulation results in dendritic branching—meaning that more connections are made. Observations also confirm that early stimulation is crucial to human brain development. By age four, most of an individual's physical infrastructure is in place. Between ages four and seven, there appears to be a spurt of dendritic branching in the right hemisphere of the brain. Another such explosion of growth occurs in the left hemisphere between ages nine and twelve. By that time, the bridge between the right and left hemispheres, the corpus callosum, has fully matured, and the brain is capable of handling complex abstractions (Jensen, 1998; Hannaford, 1995).

Summarizing replicated and reliable research on the physiological changes in the brain that are generated by an enriched environment, Jensen (1998) concludes, “Today’s biology suggests that it’s the arts that lay the foundation for later academic and career success” (p. 36). The arts get children’s attention and promote creativity, concentration, self-assurance, problem solving, and self-discipline. Jensen’s book provides specific data on why this is so and the ways that the brain is physically altered by music, motor learning, and emotional experiences.

Each game has specific educational goals but, at the same time, general learning capacity is enhanced through the engagement of both body and brain in song coupled with movement.

Seven Shona Singing Games

In this article, I will describe seven games central to the Shona-speaking culture and interpret them in the light of recent cognitive research. I collected videotapes of children playing the singing games between 1992 and 1994. Most of the games played were observed at four primary schools—Madzivire, Hokonya, Madondo, and Chivese, all located in the Nharira Communal Lands, Midlands Province, central Zimbabwe. Some of Gelfand and Jensen’s insights apply to the children’s games in the Nharira repertoire. Each game has specific educational goals but at the same time, general learning capacity is enhanced through the engagement of both body and brain in song coupled with movement.

Chaminuka ndimambo. All children in the preschools of the area learn the traditional song and dance “Chaminuka ndimambo.” The text says that Chaminuka (ChAH-min-oo-kAH) is a great chief who is like the lion waiting in the forest. All who meet him there flee from him. This song recounts the tradition of this hero-ancestor of the Shona people, whose spirit has reappeared to the people during many crises. Not only was Chaminuka a great warrior, but he is also credited with giving his people the mbira, a widespread metal-keyed musical instrument. Paul Berliner (1978) recounts several contemporary versions of Chaminuka’s involvement with mbira music. In one, he is protected from his enemies on the battlefield by the music he plays on the instrument. Many other stories emphasize a connection between music and personal power. What I call the “Chaminuka Effect” refers to the learning promoted by music in the culture of Shona-speaking people in Zimbabwe.

Maringoringo. “Maringoringo” is a counting song. One child taps a beat on the knees of the other children sitting in a line. The leader is in the middle and reaches to both sides. The words are chanted; some are vocables, and some are instructions, as at the last, “Bend your leg under.” At the end of the verse, the last-tapped leg must be folded up. After several repetitions, the person who retains one leg outstretched wins. Counting and memory are enhanced by music in at least three ways, according to Jensen (1998). The music is a means of arousal, because it gets the brain’s attention. Second,
music is a carrier of knowledge. Coupled with words, melody adds more information and promotes retention. Finally, the music itself primes the brain's activity by stimulating the neural firing patterns, thus increasing the number of physiological connections and producing optimal conditions for learning.

Rure rure. The point of “Rure rure” is memorization. Each child in the circle is named in turn. There is a message in the text about women serving families. The phrase “azvara mwanega-ka” translates into “the woman gave birth to a cucumber.” This vivid image is repeated over and over again with a clapping and jumping pattern at the end of the verse. Perhaps some of the subliminal learning is that life is full of absurd and unexpected occurrences. The phrase or proverb will be well remembered because it is coupled with a challenging physical response. Research shows that such closure is useful to set the learning experience. “When emotions are engaged after a learning experience, memories are more likely to be recalled and accuracy goes up” (Jensen, 1998, p. 80).

Singing games are powerful vehicles for learning because they have not only melody but actions. Physical activity enhances brain power. Exercise creates a greater density of blood vessels in the molecular layer of the cerebral cortex. Furthermore, exercise triggers release of a natural chemical labeled brain-derived neurotropic factor (BDNF). BDNF “boosts the ability of neurons to communicate with each other” (Jensen, 1998, p. 86). Challenging motor learning has been seen to help to generate new synapses in the cerebral cortex. Movement arises from the cerebellum, a small central area that contains over half of the brain’s neurons. In the past, this area was styled the “reptilian brain” and thought to govern only reflex action. Now we know that the cerebellum sends signals to the entire brain, including direct paths to the pleasure centers in the神经系统. Complex movements such as dance steps appear to activate more than just the cerebellum. They incorporate the prefrontal cortex and the back two-thirds of the dorsolateral frontal lobes. These areas are the parts of the brain used for sequencing and problem-solving.

Finally, the music itself primes the brain’s activity by stimulating the neural firing patterns, thus increasing the number of physiological connections and producing optimal conditions for learning.

Vai Kadumba. The fourth game, “Vai kadumba,” focuses on physical dexterity. A child’s name is called. He or she answers “wo-ye” (I’m here) and moves to the center of the circle to hop on one leg for as long as possible while the rest of the children sing “Vai kadumba, kadumba.” According to the latest brain research (Jensen, 1998; Hannaford, 1995), this simple repeated activity is enlarging brain capacity for problem-solving.

The singing games described thus far use text and melody for cognitive impact and movement for the enhancement of physical dexterity. A third area of focus is the impact of emotion on learning through games. For one round of “Vai kadumba,” the teacher called five girls into the circle. As they finished, they collapsed on one other in hugs and exclamations. Playing this game obviously stimulated warm emotions among the children. In Zoltán Kodály’s approach to music education, the fundamental content for beginning music classes in Hungary is children’s singing games. The author of that country’s preschool curriculum, Katalin Forai (1988), lists the feelings generated by children’s play—the negative fears of being caught and anxiety at not being chosen and the positive feelings of surprise and excitement. She stresses the importance of children being able to experience all of these emotions in a safe environment that offers an atmosphere of support and joyous response.

According to Jensen (1998), feeling influences meaning-making and cognition. The part of the brain most involved in emotions is the amygdala, located in what is sometimes called the limbic system. When the amygdala shows arousal, “Imprints are stronger and information is remembered” (Jensen, 1998, p. 72). Many of the traditional Shona-language games incorporate strong emotion into the game-playing.

Tarisai mukati. Tarisai mukati is a chasing game that is similar to “Drop the Handkerchief.” Children sit in a circle and are told to “tarisai mukati” (watch out), or they will become the lion’s meat. (“Shumba inoruma” translates as “the lion is hungry.”) The two phrases are chanted as a call and response with children facing inside the circle, pounding the
ground, while the “lion” on the outside runs around and drops a stone behind someone, who then gives chase. The game teaches children awareness and watchfulness of everything in the environment. It is a game of survival and is therefore coupled with a text intended to generate fear.

_Vana vangu vapera._ A sixth game, “Vana vangu vapera,” means “all my children have disappeared.” A line is formed as in “Crack the Whip.” The front child is the “mother.” Another child, appointed “the bird that lives in the veld” (the predator), tries to pull away the last child in line. The mother and the entire line of children try to keep this from happening. However, they are not allowed to break loose and run. The lesson is that of survival through group solidarity. Like “Tarisai mukati,” the teachings in this game are laced with emotion that makes a deeper impact on the brain.

_Tsuro nembwa._ The final game is “Tsuro nembwa,” a classic chase game between a rabbit and a dog, with the “rabbit” dodging among the standing circle of singing children in order to evade the “dog.” This game and “Vana vangu vapera” require strategy formulation and kinesthetic problem-solving skills to save the last child in the line from the bird or to use the circle of children as foils to dodge the chasing dog. Michael Gelfand (1979) observed that in Shona culture, dances are considered tests of general intelligence. Watching their children dance, parents evaluate their child’s potential for becoming “a personality or a fool” (Gelfand, 1979, p. 194). Skill in dancing is also a consideration for selection of marriage partners. Modern research into brain patterns has validated such criteria by uncovering the psycho-biological connection between movement and the development of intelligence.

### Conclusions and Observations

To summarize, it is now possible to demonstrate a relationship between the traditional practices of Shona education and the results of empirical scientific inquiry on how people learn. I have tried to bring those dual strands of intuition and science together in this brief analysis.

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*It is now possible to demonstrate a relationship between the traditional practices of Shona education and the results of empirical scientific inquiry on how people learn.*

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Anglo-American society has strayed from the path of “music for all” toward music for the “talented few.” The attitude of the industrialized west that musicality is a gift is expressed by Winner (1982) in her book on the psychology of the arts: “The ability to perform music, either vocally or on an instrument, and the ability to compose music both entail the capacity to master a symbol system. In this sense, music is like language. But while everyone is able rapidly to master the symbol system of language, only the rare individual can accomplish this feat with respect to music. Musical genius seems an awesome capacity precisely because the kind of skill needed to master music is so rarely represented in the human population, whereas the same skill is taken for granted when it comes to language” (p. 242).

Most Zimbabweans see no such separation between musicality and language. Their perspective is reflected in their often-quoted proverb “If you can walk, you can dance; if you can talk, you can sing.” The people I observed simply assumed that all children are able to sing and dance. When I asked the mothers and caretakers of children in the Nharira Communal Lands if some adults sing better than others, the forty-five respondents agreed that there are differences. Only one person said that there are adults who cannot sing. Another ventured that there are poorer singers, but, when asked to name one, said, “No one is a poor singer.” When I asked them to give examples of better singers, the majority named family members—a father, a grandmother or grandfather, or an older child. Four people said, “Myself.” With the exception of two teachers who named three nationally known singers—Simon Chimbetu, Thomas Mapfumo, and Oliver Mutukudzi—as exceptionally good, all specified members of their own community (Kreutzer, 1997). These answers demonstrate the Shona belief that singing is the domain of ordinary people rather than an elitist activity.

In a singing culture such as Zimbabwe, music education and education through music are closely intertwined. John Blacking (1989) proposed that music educators should reverse their search for the factors that enhance musical development and ask instead, “What are the factors that inhibit
the unfolding of a human being’s music-making capacity?” Extrapolating from Nharira data, I see four factors that may prevent children in the United States from engaging in the amount of singing and dancing that Shona children do:

- the imbalance in the accessibility of music and language
- the attitude that music is a gift allotted to special individuals
- the scarcity of personal interactions through musical experiences
- the limited encouragement of physical movement in response to music.

The beginnings of a reverse trend toward education through music may be seen in some educational practices in North America. A few test schools have placed music, stories, dramas, games, and dance at the heart of their curricula. Those schools include Ashley River in Charleston, South Carolina; Elm Elementary in Milwaukee, Wisconsin; Key School in Indianapolis; and Anza School in Los Angeles, California. Oddleifson (1990) cites test scores from these schools and others to advocate that the arts be taught during 20 to 30 percent of the school day. At the arts-based Fine Arts Core Education (FACE) school in Montreal, Quebec, students scored at least 20 percent higher on the SAT than students from other schools in the district. The difference was that students at FACE had more arts education during their years of attendance.

Students from Japan, Hungary, and the Netherlands consistently score highest in the world on measures of science and math (Oddleifson, 1990). These countries have extensive training in art and music as part of their elementary school requirements. Data from varied sources continue to confirm the long-time knowledge of many societies: engaging children’s brains, bodies, and emotions in music results in learning on many levels.

Data from varied sources continue to confirm the long-time knowledge of many societies: engaging children’s brains, bodies, and emotions in music results in learning on many levels.

**Note**

1. The ideas in this article were first developed in conjunction with a presentation of the children’s games on videotape at the 43rd annual meeting of the Society for Ethnomusicology at Indiana University, October 22, 1998. The article includes research conducted between 1992–94, assisted by a grant from the Joint Committee on African Studies of the Social Science Research Council and the American Council of Learned Societies. Funds were provided by the Rockefeller Foundation. All research was carried out with the permission of the Research Council, the Ministry of Education and Culture, and the Ministry of Social Welfare of Zimbabwe. A full account of the work is available in N. J. Kreutzer, “The Nature of Music Acquisition among Selected Shona-Speaking People of Rural Zimbabwe as Reflected in the Vocal Productions of Children from Birth to Seven Years.” Ph.D. diss., Indiana University, 1997. Dissertation Abstracts International, 5808A.

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Culturally Responsive Teaching: Understanding Disability Culture

Alice-Ann Darrow¹

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:

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 stereotypical 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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What is This?
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.

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with disabilities in their music classes (Heller, 1995). Unfortunately, there is limited knowledge and few recent studies of music educators’ overall level of involvement with students with disabilities.

One early study that documented participation and need for information on how to individualize instruction was a nationwide survey of 789 music educators on mainstreaming students with disabilities into music classes (Gilbert & Asmus, 1981). In a later survey of music educators, 63% (84 out of 133) indicated that they had not been involved in the development of the IEP for any of the students with disabilities who they taught, and only 11% (15) indicated moderate involvement (Atterbury, 1986b). Furthermore, a survey of respondents from two different states (i.e., Iowa and Kansas) indicated that only 13% were involved in IEP programming (Gfeller, Darrow, & Hedden, 1988). In an interview study of 35 music educators (i.e., 17 general music, 13 instrumental music, and 5 vocal music), 26 indicated a critical need for collaboration between music and special educators (Darrow, 1999). One participant stated,

I have never been included in any of these students’ staffings. I would be happy to try to go if I even knew when they were. The lack of information we receive about some of these students is amazing. I think I could be a better teacher if I were aware of the students’ strengths and what strategies have been successful in the past. (Darrow, 1999, p. 6)

Another study found that 72% (77 of 107) of music educators were “rarely” involved in making decisions regarding placement of students with disabilities (Frisque et al., 1994). Together, these studies indicate a history of little involvement by music educators in the IEP process during the 1980s and 1990s.

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 useable, 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).
Training and Staff Development

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).

Table 1. Demographic Information of Music Educators

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>141</td>
<td>70.1</td>
</tr>
<tr>
<td>Male</td>
<td>60</td>
<td>29.9</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
<td>100.0</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>40.8</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Max</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Degree</td>
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<td></td>
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<tr>
<td>Bachelor’s</td>
<td>96</td>
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<tr>
<td>Master’s</td>
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<td>48.8</td>
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<td>Specialist’s</td>
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<td>1.5</td>
</tr>
<tr>
<td>Doctorate</td>
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<td>1.5</td>
</tr>
<tr>
<td>Missing data</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
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</tr>
<tr>
<td>Years teaching</td>
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<td></td>
</tr>
<tr>
<td>1–5 years</td>
<td>49</td>
<td>24.4</td>
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<tr>
<td>6–10 years</td>
<td>34</td>
<td>16.9</td>
</tr>
<tr>
<td>11–15 years</td>
<td>32</td>
<td>15.9</td>
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<tr>
<td>&gt; 15 years</td>
<td>86</td>
<td>42.8</td>
</tr>
<tr>
<td>Total</td>
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</tr>
<tr>
<td>Areas of music instruction</td>
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<tr>
<td>General music</td>
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<td></td>
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<tr>
<td>Strings</td>
<td>20</td>
<td></td>
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<tr>
<td>Chorus</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Band</td>
<td>91</td>
<td></td>
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<tr>
<td>Geographic location</td>
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<td></td>
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<tr>
<td>Metropolitan</td>
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<td>50.7</td>
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<tr>
<td>Nonmetropolitan</td>
<td>99</td>
<td>49.3</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: N = 201. Respondents were allowed to report more than one area of music instruction.

Table 2. Recent Training and Staff Development Received by Music Educators in the Education of Students With Disabilities

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal peer training</td>
<td>82</td>
</tr>
<tr>
<td>Conferences</td>
<td>74</td>
</tr>
<tr>
<td>Single-day workshops</td>
<td>69</td>
</tr>
<tr>
<td>College courses</td>
<td>18</td>
</tr>
<tr>
<td>Preconferences</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: N = 200. Missing data for one respondent. Respondents were allowed to check all that apply. Recent training indicated within past 5 years.

Table 3. Frequency of Reasons for Not Participating in Individual Education Program (IEP) Development

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not invited</td>
<td>79</td>
</tr>
<tr>
<td>Not told of IEP time</td>
<td>36</td>
</tr>
<tr>
<td>Not necessary to attend</td>
<td>35</td>
</tr>
<tr>
<td>Schedule conflict</td>
<td>19</td>
</tr>
<tr>
<td>Told I didn’t have to go</td>
<td>18</td>
</tr>
<tr>
<td>Othera</td>
<td>16</td>
</tr>
<tr>
<td>Too busy</td>
<td>7</td>
</tr>
<tr>
<td>Not interested</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: Respondents (N = 201) were allowed to check more than one reason.

a. Open-ended responses from respondent.

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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**References**


Their Own Best Teachers: How We Help and Hinder the Development of Learners' Independence

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What is This?
Their Own Best Teachers
How We Help and Hinder the Development of Learners’ Independence

Abstract: Skillful teachers have developed the ability to take learners from the first conception of a goal to its accomplishment in shorter and shorter periods of time, with fewer and fewer errors on the learners’ part and with increasing satisfaction and diminishing frustration on the teacher’s. This article deals with the extent to which teachers provide learners assistance in their struggles to accomplish goals. At times, teachers may provide more assistance than is actually required and, in so doing, inadvertently limit learners’ development over the long term.

Keywords: learning, memory, practice, rehearsal, research, teaching

It’s next to impossible to learn something deeply if you’re simply following instructions.

Robert A. Duke is a Marlene and Morton Meyerson Centennial Professor in Music and Human Learning and director of the Center for Music Learning at the University of Texas at Austin. His most recent books are Intelligent Music Teaching: Essays on the Core Principles of Effective Instruction, and The Habits of Musicianship, which he coauthored with James L. Byo. He can be contacted at bobduke@austin.utexas.edu.
their struggles to accomplish goals. In particular, it’s about the possibility that we at times provide more assistance than is actually required and, in so doing, inadvertently limit learners’ development over the long term.

What Gets Remembered

The current conception in psychology of what we think of as now (the psychological present) is an interval of about three seconds’ duration. Thus, a typical waking day may contain as many as 20,000 nowness, most of which are entirely forgotten. And it’s a good thing that they are. There would be no advantage to remembering every car I passed on the way to work in the morning, or to my remembering every detail of my morning commute. This raises the question of what in our memories seem to us nearly indelible. This raises the question of what in our experiences and our perceptions of them signals the brain to hold on to a memory. What leads to a memory’s persistence?

Several semesters ago, I watched a video recording with one of my graduate students who was teaching a beginning cellist to play “Twinkle, Twinkle, Little Star” for the first time using his bow. Prior to each repetition, my student asked the young cellist to “get ready to play,” whereupon the child placed his bow at some wacky orthogonal angle to the string and smiled at his teacher. The teacher then moved the child’s bow to the correct position, reminded him to keep his bow straight, and directed him to begin playing, which he did. After the piece ended, my student gave some feedback, which the cellist listened to with careful attention, and again told the child to “get ready to play,” followed by the wacky angle of the bow on the string. The teacher dutifully moved the bow to the correct position, reminded the student of the importance of a straight bow, and the student played again. I watched this happen at least five or six times, after which I stopped the recording and looked at my student, who was clearly exasperated with her young charge. “What’s wrong with him?” she asked. “I keep putting the bow in the correct place, and he keeps placing it incorrectly.”

Consider the sequence of events:

- Student places bow incorrectly
- Teacher corrects position
- Student plays
- Teacher gives feedback and directs the student to begin again
- Student places bow incorrectly
- Teacher corrects position
- Student plays
- Teacher gives feedback and directs the student to begin again
- Student places bow incorrectly
- . . . and so on.

Learning Is Error Correction

It’s biologically expensive to change your mind. The old metaphor that brains are like tape recorders (or, now, flash drives) that our experiences are simply written on in real time is colossally inaccurate. When you’re working at your computer and you decide to save your work and you click the Save command, your computer looks for a blank space on the drive, where it writes what you saved and assigns it an address. Binary switches on the drive flip from 0 to 1 or from 1 to 0 in ways that represent the stuff you saved. The next day, when you click on the file name, your computer simply finds the address and reads off the data attached to it. Barring some electrical malfunction or physical damage to the drive, what is read off is precisely what was written the day before.

Organic brains, including human brains, work nothing like that. First, there are no blank spaces in your brain. There’s a lot of stuff in there already, and what your brain tries to figure out as it forms a new memory is how your ongoing experience is related to what’s already in your head—the old stuff with which the new stuff will become associated.

Second, most memories take time to stabilize and become resistant to interference and forgetting, a process called memory consolidation. With the exception of experiences that are tagged with intense emotion—fear, especially—most memories for most experiences begin in a labile state and, over the course of subsequent hours and days, are susceptible to modification and fading. In the ensuing hours following a learning experience, the process of memory consolidation stabilizes memories, rendering them more persistent. Energy is required to accomplish this because memory consolidation involves changes to the physical structure of the brain. Unlike the hard drive, changes in memories stored in an organic brain require changes in the brain’s physical makeup and configuration. We now understand that the consolidation process continues during sleep, when memories of experiences during the waking day
are further stabilized and, in some cases, enhanced.4

Finally, memories stored in organic brains are ever changing. Everything that we encounter, we perceive and remember somewhat differently than the person next to us, because each of us brings a different set of memories to the moment of shared experience. In other words, memories of the past, which create expectations about the future, influence our perceptions of the present.5 How we experience each now is colored by what we’ve experienced previously, and our memory of a given now is susceptible to modification by what we experience in the future.

All of this is to say that human memory is not a static record of the past, like the memory of a computer’s hard drive. Rather, it is dynamic, changing over time and as a result of experience.6 When your computer is working as it should, storing a new memory has no effect whatsoever on the other memories recorded on the drive. When your brain is working as it should, new experiences often influence the memories that have been stored in the past.

So what would motivate a brain to commit an experience to memory or to modify a memory that’s already stored? The answer is error correction. And by error, I mean a discrepancy between a learner’s intentions (expectations) and actual outcomes. In music, this definition of error extends well beyond wrong notes, wrong rhythms, or mushy diction and includes all of the discrepancies between what a musician intends and what a musician does. To an artist-performer, for example, a note that doesn’t start beautifully and a phrase ending that’s not timed quite right are errors (discrepancies between intention and outcome) in the same way that a missed key signature may seem like an error to a novice.

Learners’ attempts to resolve the dissonance between their expectations and subsequent outcomes create new memories and refine old ones. Being told or shown by a caring teacher how to correct the errors you make is not at all the same as resolving errors on your own, because the teacher can do much of the work for you: locate the error, explain its cause, and provide a prescription for eliminating it. Consider that in order to correct errors on your own, you first have to have an intention, then have to perceive the discrepancy between it and the outcome, and then have to change your behavior to eliminate it, most often over the course of multiple repetitions.

There are excellent models for this kind of advantageously error-filled learning that many of our students experience
all the time: well-designed video games. We have all known children who are declared intractably “unmotivated” by their teachers and parents, but who will sit in front of an Xbox until their thumbs bleed. What’s up with that? What’s up is that the game in the Xbox is a skillful, strategic, and highly consistent teacher. A great game leads players to develop expectations and intentions relevant to winning the game. Those expectations are often strategically thwarted by the game in ways that require modifications in the players’ thinking and doing. Over repeated attempts, players can shrink the discrepancy to near zero, at which point the game adds a new twist or a more challenging goal that in turn introduces new errors.

I often give a talk titled “Practice Makes Better. Practice Makes Worse. Practice Does Nothing at All.” I like the title because all three of those statements can be true, depending of course on what practice entails. For practice to make better, practicers need to perceive discrepancies between their intentions and the actual sounds coming out of their instruments or their own voices. And for that to happen, they need to actually have an intention about what sounds they are trying to make. I’ve met a lot of students who have no such intentions at all. Their intention is to make sound (off and on) for about thirty minutes, thus completing their practice requirement for beginning band or piano and getting a signature from their parents on their practice forms. I’ve met others for whom errors are only missed notes, missed rhythms, and stopping; they have little mental conception of the sounds they’re trying to produce or the ideas they wish to express to a listener through those sounds. None of these students will gain an optimal benefit from practice. They don’t have a clear auditory image in their minds of what they’re about to do (intention), so there is no way for them to assess the extent of the discrepancy between what they intend to sound like and what they actually sound like.

I think most music teachers subscribe to the idea that repetition is a necessary part of developing and refining music skills. So far, so good. But learners must be able to distinguish one repetition from another, and as they gain in physical skill, there must be commensurate gains in auditory and physical discrimination. Advising young students to play a given passage ten times, for example, is not fruitful if the students can’t hear or feel the difference between one repetition and the next. If they can’t, then it’s not surprising that practicing is viewed as generally unmotivating because, literally, it’s all the same to them.

Practicing an instrument or singing without clear expectations and intentions
about what’s supposed to happen is like having to play a lousy video game for thirty minutes a day and have your parents sign an affidavit certifying that you did so. Imagine a video game with shapes on the screen that are so dark and obscure that you can’t really see what’s going on, and you’re not entirely sure what the shapes are supposed to do. You’re pushing buttons and shapes are moving around, but you can’t determine precisely what effect your movements are having on the dimly lit stuff on the screen, and you wouldn’t quite know what to make of it even if you could make it out. Wanna keep playing? No way.

Countless children practice music just like that. What they’re trying to accomplish is not entirely clear to them. They know that they’re supposed to repeat what they play, but they have little sense of how each of their repetitions differs from the others or how their physical movements moment to moment affect the sounds they’re making in each repetition. Wanna keep practicing trumpet? No way.

Well, why don’t these students know what they’re supposed to sound like? They’ve been told and they’ve been shown, and when they made mistakes in class or in their lessons, they were told and shown some more. They’ve had well-intentioned teachers correct their errors efficiently, consistently, and ultimately, unfortunately, in ways that limited their own cognitive involvement (and cognitive effort). Not good. Not enough (self-directed) error correction.

The Value of the Muddle

Perceiving a discrepancy between an intention and an outcome is often frustrating for a learner. It’s particularly frustrating when the path to resolving the discrepancy is not entirely clear and initial efforts do not lead quickly to discernible improvement. Confusion is a little unsettling. Not being able to do something you’re attempting to do is frustrating. How learners deal with the unsettled feeling and frustration has everything to do with how well they learn and how independent they become.

When our own children, after several attempts to reach a goal, become frustrated by some seemingly insurmountable obstacle, they often look to us for help, which we are often happy to provide. Many of our students behave similarly. I don’t know where to start. Tell me. I can’t figure this out. Explain it to me. I don’t know how to do this. Show me. One of my favorite graduate students told me about a student in her class who was trying to figure out a piano fingering as she was standing beside him watching. After several unsuccessful repetitions, he looked to her and said, “If you were a good teacher, you’d tell me how to do this,” whereupon my very astute and skillful grad student replied, “Yes, but because I’m an excellent teacher, I’m going to wait a while longer while you figure it out.” Of course, she said that with the informed confidence that her student could in fact figure it out, which he did after the next few attempts.

Think about what the student learned from that experience, other than the fact that his teacher’s a hardnose. He discovered that be could figure it out. His moments in the muddle led to his arriving at an advantageous solution, and all of the errors he made along the way actually strengthened the memory of the solution and the path he took in reaching it. His memory for that fingering will in all likelihood be more persistent, more understandable, and more generalizable than it would have if the teacher had simply told him what to do.

To understand how human learning functions best, it’s instructive to consider how very young children learn what they learn and to identify the features of their experiences. Consider an infant learning to ambulate. Kids want to move because they want to get somewhere, often with the goal of putting enticing objects into their mouths. All of us who’ve been around a lot of infants in car seats have enjoyed the sight of enormous smiles accompanied by flailing limbs at the sight of some wiggly, noisy toy. The smile reveals the toy’s appeal, and the flailing limbs reveal an inability to control the body to obtain a goal. As the weeks and months pass, children sitting upright on the floor learn that when they tip over in the direction of the object of their desire, the object is closer than it was when they were upright. After landing on their bellies, they learn in the ensuing days and weeks that by moving their arms and legs they can scoot a little closer still. After raising themselves up on hands and knees, they discover that there’s a combination of limb movements that will actually propel them in the direction they want to travel, eventually reaching the precious cat dish, which promptly goes in the mouth.

There are two features of learning experiences like this that are central to their effectiveness. First, the learning is highly goal directed (I can’t wait to find out what that cat dish tastes like!). Second, it’s fraught with error. Infants learning to move have very clear goals that they’re trying to accomplish, and on the way to accomplishing them, they fail a lot. Why does all that failure not lead to their just giving up and deciding that crawling and walking are not really worth it? Two things: the clarity of the goal and the fact that interposed among the many failures are many self-derived successes. Even to us adults, it’s nice when someone shows us how to do something we don’t know how to do. When we figure it out on our own, it’s downright spectacular.

If students’ learning comprises primarily doing things that teachers tell them to do and show them how to do, then it’s not surprising that many children find school unmotivating. What they’re learning is not really mathematics or science or musicianship. What they’re learning is to remember and follow teachers’ instructions. Compliance is a good thing in some ways, but it’s not exactly a path to creative, critical, independent thinking. It’s also an ineffective way to build flexible intellectual and physical skills that can be applied advantageously in situations that have not been explicitly taught. Doing that requires error on the part of learners—failing, figuring out what happened, trying again, failing some
more, figuring out some more, and finally getting it.

I was invited to give a talk at a meeting in Dallas, Texas, a couple of years ago, and one of the other people on the program was a famously successful young high-tech entrepreneur. During his talk, he described the workspace in one of his new Internet companies. Hanging on the wall was a large sign that read FAIL FAST. The message to his employees was not to avoid failure, but to hurry up and fail so you can gain more information about what you’re trying to do. How brilliant is that?

It’s next to impossible to learn anything deeply if you’re simply following instructions. Mistakes are essential in learning, but what renders the mistakes useful is their being corrected by the learner. It’s the repeated attempts in the face of failure that provide the most useful information, hone perception and skill, and develop insight into what the heck it is you’re trying to do. When you fail initially, and someone else does the fixing, you may in fact accomplish the goal you were attempting. But if you do the fixing yourself, you not only succeed; you also understand. And understanding is the key to intellectual and physical independence.

Doing what you’re told won’t get you all that, because it doesn’t sufficiently engage your brain. When you’re in the weeds and unhappy about it, having somebody guide you out is certainly a relief. Finding your own way out combines the feeling of relief with a feeling of intense personal satisfaction, gained as a result of increased understanding. Working through muddles, then, produces intellectual, physical, and emotional positives that are simply not attainable in any other way.

Structuring experiences like this requires much more than throwing kids in the weeds and wishing them luck. Creating unsolvable confusions for learners is just mean. But creating strategic confusions—estimating what learners are independently capable of and then designing tasks that require them to use their capabilities to reach meaningful goals—nurture the development of intellectual and physical skills while setting up personal rewards that are obtained through learners’ own efforts. Truly great teachers do this all the time. So do the authors of Angry Birds. And with some practice, and failure, and more practice, all teachers can learn to do this, too.

NOTES


7. The entrepreneur at the meeting was Scott Jones. Although I hadn’t heard of Jones before I met him in Dallas, he’d been affecting my life for a number of years. At age twenty-five, Jones sold his first company, a voice mail startup, for $843 million. Patented systems that Jones developed are used in voice mails all over the world. He went on to develop Gracenote, a name you may recognize because it’s emblazoned on the fronts of many CD players. He sold Gracenote to Sony for $260 million. He’s created a number of other companies as well. The employee workspace he told us about was located in what was at the time his newest venture, a company called ChaCha.
by Christopher W. Peterson and Clifford K. Madsen

Encouraging Cognitive Connections and Creativity in the Music Classroom

Abstract: The ability to apply knowledge rests at the core of the educational experience and is an important aspect of all teaching. In music education, many experiences are structured so information gained can be related to another activity, but such transfer can be difficult. When students learn to transfer information and knowledge to new situations, they are more likely to retain that knowledge; this retention seems to be enhanced when the information is presented within an activity where creativity is encouraged. There is also evidence to support a technique where the teacher clearly states that transfer is a goal for learning in a “community-of-learners” environment, where the students share verbally their creative connections with the class. This article is an exploration of the concept of transfer and includes strategies for teaching creative thinking through transfer activities in the secondary music classroom or rehearsal setting.

Keywords: creativity, development, recruitment, retention, standards, teacher education, teaching issues

Teachers of music face many challenges in their specialized areas of instruction. For example, elementary music specialists instruct large numbers of children throughout the day, and they must have a variety of approaches to accommodate their students’ various stages of cognitive development. Middle-level teachers routinely adapt their teaching to motivate students who are experiencing awkward transitions to adulthood. High school teachers must recruit, train, and retain musicians in an environment of greater and greater demands on student interest and time.

There are also many shared difficulties encountered by all music teachers, regardless of the ages and abilities of the students. One of these shared obstacles is encouraging students to retain information from their lessons and to apply these understandings to new situations. The ability to interrelate procured information is usually referred to as generalization or “transfer,” and anyone responsible for designing, managing, or conducting a music organization knows the frustration experienced when participants in the program do not, cannot, or will not apply what they are supposedly taught. The need for preparing students studying music with diverse skills and the ability to make meaningful transfers seems especially important.

A person’s ability or inability to apply knowledge rests at the core of the educational experience and, therefore, is an important aspect of all teaching. But while...
the importance of transfer to learning has a healthy consensus, authors have defined transfer in similar, but contrasting, frameworks. In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. In this taxonomy, skills involving analysis, evaluation, and synthesis are of a higher order, requiring different learning and teaching methods than learning facts and concepts does. Higher-order thinking involves the learning of complex judgmental skills, such as critical thinking and problem solving. This type of thinking is more difficult to learn and to teach, but it also is more valuable because higher-order skills are more likely to be useable in new or novel situations. Grant Wiggins and Jay McTighe have stated, “Learning for understanding requires that curriculum and instruction address three different interrelated academic goals: helping students (1) acquire important information and skills, (2) make meaning of that content, and (3) effectively transfer their learning to a new situation both within school and beyond it.” Robin J. Fogarty and Brian M. Pete divide transfer into simple and complex. “Simple transfer is almost automatic because it ‘hugs’ the original learning situation and takes little effort to apply to a novel situation. Complex transfer requires thought and effort because it is a transfer that is remote from the original learning and takes conscious awareness to find the connections or to ‘bridge’ ideas to novel situations that make relevant transfer.” David Perkins and Gavriel Salomon explain that “transfer of learning occurs when something learned in one context has helped in another.” They suggest that transfer occurs as either (1) low-road transfer or (2) high-road transfer. Low-road transfer is an unwitting process triggered when a situation that one is in is perceived as similar to a previous situation in which learning occurred. For example, a student picks up a new instrument for the first time, such as the guitar. If the student already knows how to play the ukulele, the student already knows similarities between the two instruments that can lead to the application of the already developed playing skills on the new instrument. High-road transfer, on the other hand, is a conscious process that can occur between two situations that lack obvious similarities. For example, if after having learned to play the guitar, a student picks up a bowed instrument, the student might struggle to find similarities between the two instruments. Yet all music educators know that there are similarities between the two.

Fortunately, music education provides many experiences that are structured in such a way as to be more practical or in which the information gained can be related to another activity. Still, the ability to transfer information from one situation or idea to another seems difficult at best. It is not uncommon for students to be required to “learn” a great deal of material in courses designed to prepare them to become “lifelong learners” or to prepare them for professional careers, or to initiate them in techniques of advanced performance. Yet, sometimes this learning includes only limited transfer of learned principles to other situations or issues.

When students learn to transfer information and knowledge to new situations, they are more likely to retain that knowledge; this retention seems to be enhanced when the information is presented within an activity where creativity is encouraged. There is also good evidence to support a “community-of-learners” approach, where the students share verbally their creative connections with the class and where the teacher makes clear that transfer is a goal for student learning. Transfer will not happen automatically for most students, so teachers must structure the learning environment to provide opportunities for all students to learn and practice transfer.

The purpose of this article is to explore the concept of transfer and to present practical strategies for encouraging creative thinking through transfer activities in the secondary music classroom or rehearsal setting.

Everything Relates to Everything

Transfer requires students to make connections between their present studies and their previous knowledge and understandings. As we teach music activities, factual information, performance techniques, or a deeper appreciation of music listening, we should pursue diligently issues dealing with transfer by stressing that “everything relates to everything.” Students will come to understand that there is nothing that cannot be related, in some way, to something else. For example, a chair and a car may seem to be completely unrelated at first thought. But with an approach that everything relates to everything, as well as a little creative thinking and positive encouragement, the connections begin to emerge. Most chairs, like cars, touch the ground in four places, either on wheels or on legs. Cars and chairs provide a place for people to sit. Both come in a variety of colors. Chairs or cars can be comfortable or uncomfortable depending on the materials they are made of. Cars get people from one place to another, and wheelchairs do the same. Cars can have adjustable seats, and chairs can be adjustable, like recliners. Both words start with the letter c, but each starts with a different sound. Chairs, like cars, can be very expensive and built for luxury, while others can be made cheaply for utility. You can take a nap in a chair, and you can nap in a car. When shopping for either, you are likely to encounter a salesperson hoping to help you find (and buy) the right one. After just a few minutes, it becomes clear that chairs and cars are much more closely related than we thought they were.

For some people, this kind of thinking comes easy, and for others, it may seem more difficult. This will certainly be the case for your students. If you, as the teacher, find it difficult to improvise a list of connections like the one outlined above, you may need to spend some time practicing your high- and low-road transfer skills before you model for the class. Like any skill, the more you practice, the easier it gets.

Introducing Transfer Tasks: Lesson 1

This approach is best implemented in the upper elementary or secondary general
music classroom. We believe that starting with written prompts and class discussions employing topics and concepts students already understand is the most practical way to begin. This approach instantly accesses the real-world experiences and concepts that relate directly to the individual student's life and held understandings. As students learn to make transfer a habitual part of their daily thinking, the creative music educator will be able to embed transfer activities into more diverse musical settings with great success.

It seems obvious that students tend to view most everything as having little "practical value" unless they are capable of making transfers to their own understandings or performing situations. Yet, until each student is capable of answering the questions, "How does this information relate to me?" and "How do I use it?" it is probably fruitless to attempt to provide "solutions" to problems or to make meaningful decisions, even if the solutions happen to be firmly based. In the beginning, students need to get started by actually doing something—anything that will foster transfer. If at all possible, the goal should be to create a strong positive association with the activity and to develop a strong positive affect with the activity.

At the very beginning of class, ask all students to take out a blank piece of paper and a pen or pencil. Have them write their name and the date at the top. Remind them that everything relates to everything, and ask each to write a common-knowledge noun. As people who are on the far right do this, ask them to come up with as many connections they make, so could you say it a different way or explain it to me again? Students should have enough time to get every idea down, but that you expect them to get momentum going toward the task, but not enough time to run out of ideas. Tell them that you do not expect them to get every idea down, but that you expect them to come up with as many connections as they can in the limited time available. It is very important that the teacher affirm all connections that the students offer. When in doubt, say, something like "I am not sure I see the connection you are making, so could you say it a different way or explain it to me again?" Students will appreciate your desire to hear them, and most of the time, the connections they make will be obvious to most everyone in the class. The amount of time devoted to this task should be only ten

Practicing Transfer Tasks: Sequencing Activities

Classes will normally begin in the same manner as the first one: students will take out a blank piece of paper and a pen or pencil and then will write their name and the date at the top. Each will write down a common-knowledge noun. As you assess their success at transfer, you can have them swap words, as in lesson 1, or you can have the whole class use one teacher-given music-related concept as their second word. For example, you can have everyone compare his or her chosen word to music. If a student wrote vacation as his or her first word, his or her task is to examine how music relates to vacation. Allow students to use any method they want, such as prose, bullet points, lists, outlines, or free-written associations, to document the connections they discover. A transfer sheet using bullet points might look something like this:

Samuel Student
December 14, 2010

VACATION and MUSIC
• Both have duration.
• Both can be fun.
• Both can be boring.
• Both are best with planning.
• You can look forward to both.
• The prettier, the better
• You can take a music vacation by going to music camp.
• There are professional musicians, and also professional vacation planners.
• Music has form, and vacations have segments too, like getting to the destination, the relaxing phase, and returning.
• A fine vacation is like a fine piece of music, with a lot of cool things to do and observe.
• People like different kinds of music, and not everyone enjoys the same kind of vacation.
• When we have school vacation, I hope to work on my composition assignment for the concert.

VACATION and MUSIC

December 14, 2010

Samuel Student

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to fifteen minutes, with everyone sharing verbally if time allows, or with only some students sharing. As always, have them pass in their transfer sheets to you as they exit the room.

As the students build mastery in critical thinking, and when you want to challenge the class even more, you should provide them with both words to compare and contrast. You can use words that relate to concepts taught in class, such as melody and form, or Copland and Mozart, or you can use current events, such as the Super Bowl and Tuesday's election. If you ask other teachers at your school about the units they are teaching, you may be able to integrate interdisciplinary concepts, such as the Civil War or genetics, to musical concepts from your curriculum. Every class is different, so you must determine the best ways to keep students challenged and thinking while allowing them to be successful during every class meeting.

**Applying Transfer Tasks: Continued Practice through Musical Activities**

Students who have acquired and practiced the skills of critical thinking through simple transfer and group discussion will have a good chance of creating higher-level connections during music-making activities. For example, players or singers in an ensemble can be asked directed questions about the music they are experiencing, such as the following:

1. What musical aspects of this work are similar to our final piece from last month's concert?
2. If this [contemporary] composer had lived and composed this piece in the Baroque era, what musical elements do you think might have been the same or different, and why?
3. What specific experience or event from your past could be underscored by this music in a movie, and why?
4. If the form of this piece could be represented by a house, what kind of house could you envision, and what musical elements lead you to your conclusions?
5. What skills from our warm-up help you most when performing this piece, and what new warm-ups would help us even more?

**Transfer Tasks: Diverse Benefits**

This approach to critical thinking, starting with writing prompts, can have many benefits for students and teacher alike. When classes begin with transfer tasks, students build habit strength toward focusing their thoughts right away. They will bring pen or pencil and paper to class every day because they will need these materials for every class. The first five minutes that the class is writing provides the teacher with several precious moments to organize the classroom environment or write announcements or assignments on the board. The verbal sharing of written ideas will become a daily positive interaction where students feel heard, and where there is no right or wrong answer to give. While it is not recommended that this task be used as a graded quiz, it is beneficial to occasionally ask the students to "write down everything you can remember about the last class." The teacher receives feedback about retention while the students get a quick review of class concepts. You can also ask them to "write about something that happened to you since the last class that relates to this class." Students may even begin, over time, to think about class concepts even when they are not in class.

Other teachers in your school may appreciate that you are honing students' critical thinking skills and that you are integrating academic concepts across the curriculum. If a student asks you a question like, "Why are we singing this song?" you can ask right back, "Why are we singing this song? You know as well as I do that everything relates to everything." The student will answer the question in a way that makes sense to him or her, and you will probably not hear the question again.

Another benefit of this exercise is the opportunity to ask for student responses to other kinds of prompts, such as "What is your favorite activity in school, and why?" or "What are the top three things you need to accomplish today?" It is not necessary to have verbal responses to every writing prompt, although the teacher should let the class know ahead of time whether what students are writing will be shared with the class. If a student does not want to share what he or she wrote during the transfer time, allow the individual to take a pass for the day, but be sure to call on that student during the next class.

**Effective Transfer**

Jerome Bruner posed the following question: "How do you teach something to a child . . . in such a way that he can learn something with some assurance that he will use the material that he has learned appropriately in a variety of situations?" Briner suggested that six problems need to be addressed for effective transfer to take place:

1. The student must believe that he or she can go beyond what he or she already knows and that there are new cognitive connections available to him or her.
2. The student must have a framework to explore new information within the context of what is already known and understood.
3. The student must be successful and thus feel rewarded for the exercise of thinking.
4. The student must have opportunities to apply and practice the skills related to the practice of information and problem solving.
5. The student must be able to both do and explain the skills he or she is developing.
6. The student should be able to compare and contrast ideas and concepts to help clarify and manage the flow of information.

The activities and sequences presented in this article help to address all six of the transfer problems posed by Bruner.
and to embrace the various frameworks of transfer outlined earlier.

Starting classes with sequenced writing prompts can help students make cognitive connections between music class concepts, interdisciplinary concepts, and even events in contemporary culture. The teacher must practice making connections himself or herself before demonstrating this skill for the class. These activities address directly the National Standards for Music Education 8 and 9: “understanding relationships between music, the other arts, and disciplines outside the arts” and “understanding music in relation to history and culture.” By starting with simple student-chosen nouns, the activity can be fun, engaging, and successful from the outset as students apply knowledge that they already have, even before taking a music class. When students are encouraged to retain understandings from their lessons, and to foster the transfer of these understandings to new situations, retention and understanding are greatly enhanced. The teacher can gain insight into the thinking processes of each student and can assess his or her writing ability. If major deficits in writing come to light, the teacher can refer the student for extra help and tutoring to improve these skills. Starting classes with transfer activities provides immediate focus for the room and dispels the need for the teacher to stop student talking; as students get out their materials and begin writing, all talking will cease. The teacher can also issue open-ended prompts for the class so that students can address ideas without directly comparing two subjects.

It is not recommended that transfer sheets be corrected and returned to the class every day. The activity is intended to increase student thinking, creativity, and retention, and all answers to those ends are considered correct. After students learn how to approach the activity, the class time required will amount to about ten to fifteen minutes per period. When the teacher has confidence in the ability of the students to transfer, connections can be woven into purely musical listening, performing, and creating activities. Once you and your students experience the fun and practical benefits of this approach, you will all agree that this is on-task class time that is very well spent.

NOTES

2. Ibid.
6. Ibid.
11. Ibid., 71–81.
Music educators are in a unique position to help children develop the socioemotional skills they will need for sensitive music-making—and for life.

Oppunities for Socioemotional Learning in Music Classrooms

Abstract: The elementary music class is an ideal setting for building socioemotional skills in children. These skills can assist children in their early music learning through brain development, and they become increasingly important as students reach higher levels of musicianship. Socioemotional learning programs are currently being used to reduce at-risk behaviors in schools. Strategies for building social skills include identifying specific behaviors, modeling behaviors we want students to learn, and devising positive reinforcement systems to reward students for showing positive social behavior.

Keywords: curriculum development, elementary, general music, lifelong learning, philosophy of music

Music has a natural potential for building social skills, and the elementary music class in particular lends itself to building socioemotional skills in children. Whether it occurs through planned or "opportunistic" learning experiences that arise unexpectedly, there are numerous ways that social learning can be successfully integrated into instruction. In fact, social skills are already prerequisites for many of the music goals we set for students. Not only can these skills assist children in their early music learning through brain development, but they also become increasingly important as students reach higher levels of musicianship. Socioemotional learning programs are currently being used to minimize at-risk behaviors in schools around the United States. Strategies for building social skills in the music classroom include identifying specific behaviors important at each grade level, modeling the behaviors we want our students to learn, and devising positive reinforcement systems to recognize and reward students for showing positive social behavior. The music class is ideal for incorporating social learning: Social skills constitute music's core, and music has long been associated with emotion. Although social skills are frequently a by-product of music skills, we have the potential to provide a stronger, more lasting impact on our students if we approach social skills as deliberately and purposefully as we approach music skills.

Classroom music involves multiple types of interaction among children. For example, we ask our students to choose a friend, switch partners, identify a classmate's voice, imitate a classmate's rhythm pattern, hold hands, clap hands with a partner, take turns, move together in time, echo another group, or share an instrument. It is easy to overlook music's natural potential for building social competency when we focus on teaching the curriculum and

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fostering musical achievement. However, every so often in our work with music students, a moment occurs in which we are clearly presented with an opportunity to coach our students in social learning. In seizing the opportunity, we see the positive effects that this type of learning has on the class dynamic and on our students as individuals.

The Rainbow Shirt

The children in Mrs. Yardley’s fourth-grade homeroom class were extraordinarily bright and moved quickly compared to the other fourth-grade music classes that I taught at the school. It was the third week of school when Tara entered Mrs. Yardley’s music class, although her subsequent visits did not follow any regular schedule.1 The fact that Tara was accompanied by a classroom aide indicated to me that she was a special learner. Her first visit was memorable: she was physically pulled into our room by the aide as she whimied, cried, and kicked her feet to the bench in the last row.

Tara seemed to visit our music class randomly, and her visits never lasted for more than about fifteen minutes. Wearing thick glasses, behind which her eyes appeared slightly crossed, Tara had long, tousled hair that she wore messily swept back into a large cotton ponytail holder. Her clothing was baggy, wrinkled, and oversized. Tara cried on a whim, for reasons that seemed to have nothing to do with our music class. For her age, she lacked manual dexterity and lagged severely behind in her reading and writing skills. Worse yet, she would frequently wet herself either before or during music class, making it even more difficult to be accepted by her peers.

Since I did not have an opportunity to participate in Tara’s Individualized Education Program meetings, I was unaware of the nature of Tara’s disability. The paperwork I received stated only what I could readily observe in the classroom. It did list specific adaptations that I was to use in instructing Tara. Although the adaptations made sense instructionally (e.g., special seating due to her poor eyesight, allowing extra time on activities and exams), the special treatment widened the social rift between Tara and her classmates. Mrs. Martinez was not only Tara’s classroom aide but also a special education counselor who had been working with Tara for more than four years. A “road map” to Tara, Mrs. Martinez could describe her moods, explain her behaviors, and provide insight about her home life. She could decipher the meaning behind Tara’s facial expressions, translate her short verbal phrases, and determine the legitimacy of her tantrums. Mrs. Martinez’s presence enabled Tara to function in many of our music class activities. Despite this, there was no social connection between Tara and Mrs. Yardley’s fourth-grade class.

I experimented by inviting Tara to sit on the front bench (with Mrs. Martinez) and then moved her seat around the room in subsequent class sessions to find the best place for her. Whenever the students were asked to work with a partner on an activity or to choose a partner for a game, Mrs. Martinez always volunteered to be her partner and helped her follow the guidelines of the activity. In November, Mrs. Martinez decided it would be in Tara’s best interest to drop her off at music class. Because Tara was a fourth grader, Mrs. Martinez wanted her to develop the independence she would later need in middle school. Contrary to Tara’s wishes, she found herself in a position to have to participate without the help of an aide for the class period. The time had come for Tara to become integrated into the class environment.

When class members were asked to choose partners for activities and games, I attempted to assign a special partner to Tara. I looked for a confident, resilient student, but for many children ten years of age, this was viewed as a punishment to have to sit with her or hold her hand during a game or activity. To help Tara become integrated into the group, I praised her name in a line of other children’s names, and even set up instructional sequences that would begin at her level and then smoothly progress to the level of the class (allowing me to call on her first to answer a question). Nevertheless, Tara remained isolated from Mrs. Yardley’s class and spent many of her classroom visits staring down at the floor or playing with her clothing until one day in early February.

As part of our lesson on musical phrasing, I was teaching a song titled “The Rainbow” from one of the music textbooks. To help the students understand the lyrics of the song, I first reviewed the colors of the rainbow. Tara stared down at the floor, unengaged in the lesson. As I climbed past her to reach for the paper rainbow I had created for this lesson, Tara’s shirt caught my eye. She was wearing a tie-dyed T-shirt containing multiple small rainbows. Setting aside my paper rainbow, I asked Tara if we could all come over and look at the colors on her shirt.

Open-mouthed, she stared at me through her thick glasses for a long moment and then nodded. As the students and I all gathered around to inspect Tara’s shirt, she smiled . . . for the first time in fourth-grade music class. Her smile was radiant. This was the closest her classmates had ever come to her, and it seemed to be what she had always wanted. “Tara, will you stand up for us so we can see the colors on the sides too?” Evan pointed to the shirt, exclaiming, “I see blue and orange!” and Olivia touched the back of the shirt and said, “I see red, and yellow also!” It was a great unscripted moment. From the periphery of the class, Tara had become the very center of the lesson. As I printed the acronym ROY G. BIV on the board (delineating the colors of the rainbow), we sang the song together, joyfully.

Opportunistic versus Planned Learning

The incident of Tara’s rainbow shirt was an example of what some call “situational” or “opportunistic” learning.1 It is not always possible to predict when such an opportunity will arise; however, the important point is that we recognize the opportunity and create a meaningful experience through it. Ideally, we need both planned and opportunistic social learning to take place in our classrooms. Planning allows us to govern which competencies are being targeted and through what means, as well as when students’ “skills” should be developed. Educational psychologists such as Carolyn Webster-Stratton have regarded social ability as learned knowledge
or skill for over a decade. For example, when discussing the formation of friendships in her book *How to Promote Children’s Social and Emotional Competence*, Webster-Stratton states, “Children learn social skills such as cooperation, sharing and conflict management. Friendships also foster a child’s sense of group belonging and begin to facilitate children’s empathy skills—that is, their ability to understand another’s perspective.” On the day we discovered Tara’s rainbow shirt, members of the class may have experienced one or more of the following aspects of social learning:

- Becoming aware of one’s self and others
- Experiencing a heartfelt connection within the group
- Establishing unconditional worth of all individuals to the group
- Being of value to others
- Expressing positive emotion to and among others
- Taking pleasure in the happiness of others
- Learning for all.

With hindsight, Mrs. Yardley’s class could have benefited from planned lessons earlier in the school year that demonstrated and emphasized these types of experiences. One way to foster development of social skills is to build them into the class incentive system. If students know they can earn a reward for prosocial behavior, and they understand what type of behavior is sought, they will typically strive to exhibit the rewarded social behavior. In my third-grade music classroom, I was using the popular Recorder Karate system by Barb Philipak (Plank Road Publishing) wherein students earn “belts” for passing each song level on their recorders. Each of our belts was represented by a colored string of yarn tied around the base of the recorder. Finding that the same students almost always passed easily while others had a great deal of trouble earning even one belt, I initiated a buddy system in which a belt holder could pair up to help a struggling student. If the struggling student passed the song level to earn his or her belt, through the help of a buddy, the buddy earned a colored bead to thread onto his or her own yarn belt. By looking at a child’s recorder, you could see not only the number of song levels he or she had passed but also the number of classmates he or she had helped accomplish a musical goal.

Several inexpensive, plastic beads changed the culture of our classroom: suddenly, the students wanted to help each other just as much as they wanted to excel at playing the recorder. What had been individual goals became a group goal. Various children who were struggling yearned to become helpers wearing beads on their recorders, but they knew they had to earn their yarn first, and this increased their musical effort. Upon earning her first bead, one helper was quick to ask, “Is it possible to earn more than one bead on my belt?” to which my reply was “Of course!”

Following are numerous ways that social competency can be integrated into music instruction, whether planned or opportunistic.

**Planning Lessons**

1. In advance of the school year, consider identifying two or three core social skill areas for each age group that correspond with the musical goals you set. Examples might include caring, sharing, helping, collaborating, or resolving a conflict.
2. Give careful thought to which songs and games you select. What message do the lyrics convey? Do the games cause students to experience rejection? Do the rules contribute to a positive group dynamic?
3. Be selective about which verses you ask the children sing. Is there one that stands out as having a particular message that could be useful to these students? If so, consider discussing it with your students and possibly explaining why this verse has a positive message.
4. Structure activities in a manner that emphasizes the importance of the class as a group in which every child's role is essential. You might invite the whole class to brainstorm lyrics to a new song together on the board, or invite one class to perform an in-house “showcase” for another.
5. When planning practice activities that involve improvisation or composition, provide opportunities for children to become aware of themselves and each other. Examples could include the following: “Does the music you wrote tell us something about you or someone you know? Name something that you like about a classmate’s pattern they composed. Find a partner who wrote a pattern similar to the one you wrote, and stand beside that person. Explain to the class one way the patterns are similar.” Build in time for silence when children can reflect on and verbalize their thoughts, feelings, and actions about a musical piece or activity.
6. When planning lessons, incorporate activities that allow students opportunities to get to know one another, to discuss likes/dislikes or personal experiences, and to reflect on the information they learn about others. One activity that works well with older students involves inviting each class member to draw a picture of his or her “musical self” (with the individual’s name written in the center) that shows what instrument(s) the individual plays, the person’s favorite musician, a concert or musical event he or she attended, and so on. When these are completed (and it could be a homework assignment), each person shares the resulting diagram with a peer. An alternative activity is to place the name of the individual on the back of the picture/diagram and have the class try to guess the name of the student whose picture is presented.
7. Observe your class closely to see if there are social skills they have not yet learned or are struggling with. Brainstorm ways to weave these skills into your music lessons.
Opportunistic Teaching

1. Model the social skills you plan to instill in your students so they can respond through imitation.
2. Find a child who is demonstrating a positive socioemotional skill (e.g., self-awareness, awareness of others, concern for the feelings of others, working well as a group member) and bring it to the attention of the class. Reinforce the skill on a regular basis so students eventually come to see it as a norm (for example, “music is for everyone”).
3. Be ready and willing to stop or adjust your planned lesson at any moment to make the most of an unexpected opportunity.
4. Talk to your students and explain why a given social behavior is important or relevant to learning music; do not assume your students will automatically understand the connection. D. Kay Johnston says, “In schools we don’t have many moments in our classes when we actually talk about [our ideas].”
5. Provide positive reinforcement (incentives, praise) for good social behavior and progress.

Author and educator Chip Wood suggests that to be successful in working with our students, we must know what they are capable of doing physically, socially, emotionally, and cognitively. In his book Yardsticks: Children in the Classroom Ages 4–14, he provides a list of characteristic socioemotional behaviors for each age group. Nine-year-olds, for instance, can work in groups, but they tend to argue. They can also olds, for instance, can work in groups, and bring it to the attention of the class. Reinforce the skill on a regular basis so students eventually come to see it as a norm (for example, “music is for everyone”).

Common Ground

Does social learning fit in with the goals of music education, and how? Social skills are prerequisites for many of the goals we already set for our music students. Consider the following examples:

- **Music goal:** Students listen to different types of music, and to music representing different cultures, with an open, accepting mind.
  
  **Prerequisite:** Students must be able to accept and embrace others who are different from themselves, as well as music that differs from their usual or preferred listening tastes.

- **Music goal:** Students demonstrate ability to rehearse or perform in a musical ensemble.

  **Prerequisite:** Students must know how to take turns, how to listen to one another, and how to show mutual respect for their classmates by supporting them through mistakes

- **Music goal:** Students work together to compose or improvise a piece of music.

  **Prerequisite:** Students must perceive every person’s ideas as worthwhile, understand that all parts are essential in making up the whole, and recognize that each person has something unique to contribute.

Basic social skills, such as those listed as prerequisites here, not only serve short-term music goals but also form the foundation for successful experiences in secondary music ensembles. A violinist in a symphony orchestra, for example, must be able to listen to violinists in his or her section and work in a cooperative manner with them. The same violinist must also be able to perceive, welcome, and follow the interpretive ideas and cues of the orchestra conductor to be successful. A jazz musician must possess a certain degree of self-awareness in order to successfully improvise a solo. This artist must also develop a profound awareness of, respect for, and sensitivity to other members of the jazz ensemble. The unspoken social network and sensitivity among members of well-established chamber music ensembles contribute to the quality of their sound during a performance and often distinguish their sound.

In discussing emotional intelligence in music education, Michele Kaschub points to the musician’s need to be able to react to criticism as well as to be able to predict how others in the group will react to it. She suggests that the “intrapersonal” growth of emotional knowledge and understanding may actually be a more important component of musical experience than “interpersonal” or social skills. Regardless of whether the social or emotional component plays a larger role in musicianship, these skills, learned at an early age, become increasingly valuable at higher levels of musicianship.

Historical Threads

While formal study of social learning can be traced back to the early twentieth century, as in Lev Vygotsky’s theory on sociocultural learning, educational psychologists first coined the term “socio-emotional learning” (SEL) in the early 1990s when interest developed in improving student competence in school (see Figure 1). SEL is defined as “the process of helping children and even adults develop the fundamental skills for life effectiveness.” Through SEL, children gain the ability to integrate thinking, feeling, and behaving to achieve important life tasks.” The Collaborative for Academic, Social, and Emotional Learning (CASEL), based in Chicago, Illinois, outlines the five main competencies of SEL skills: self-awareness, self-management, social awareness, relationship skills, and responsible decision making. SEL programs being implemented throughout the United States enable educators and administrators to proactively minimize
poor student conduct, student depression, and academic failure through early cultivation of the five competencies. At the secondary level, schools using SEL programs are experiencing a decrease in absenteeism, school dropout numbers, aggressive/violent behavior, and marijuana and alcohol use (see Figure 2 for supplemental resources on SEL).11

In response to John Mayer and Peter Salovey’s work in SEL, psychologist Daniel Goleman stated that emotional intelligence is “a different way of being smart” from cognitive intelligence, because it results from a different part of the brain: the amygdala.12 Although he lauded Howard Gardner’s rejection of intelligence as a single-faceted phenomenon, Goleman argued that Gardner’s perspective is narrowly cognitive and that he neglects the importance of “feeling.” According to Goleman, emotional intelligence differs from cognitive intelligence in that it makes us more fully human, it can be developed experientially, and it is much more closely linked to a person’s success in life.13

### Build a Caring Classroom

Researchers have found that positive relationships among students (and also between teacher and students) result in greater commitment to group goals, feelings of personal responsibility to the group, willingness to take on difficult tasks, motivation and persistence in working toward goal achievement, willingness to listen to and be influenced by peers, and commitment to one another’s growth and success. Many of these attributes relate to music-making. These investigators have also indicated that friendships lead to increased involvement in school-related activities, a greater sense of belonging, and an easier transition to new school levels.14

As Daniel Goleman points out in his book Emotional Intelligence, the basic life skills that children are able to acquire through SEL happen as a result of brain development. Student stress decreases when a positive emotional climate is established in the classroom, through joy, laughter, spontaneity, group interaction, and creativity. Students become comfortable through self-confidence, trust, and positive feelings for their teachers as well as through supportive classroom communities. Neuroimaging studies indicate that the brain is able to transmit and store information more successfully when the student’s comfort level in the classroom is high.15

From a historical perspective, the concept of a caring classroom community sustains the principle that American music education was initially founded on: Music is for every child. Lowell Mason’s inaugural year of teaching in the Boston Public Schools in 1837 launched the belief that all children are capable of learning music. Soon after, “Music for Every Child” became the first slogan for the Music Educators National Conference (now the National Association for Music Education). It is our obligation to make sure our students understand that learning music is their right and to show them how this privilege can be manifested in the classroom on a daily basis.

### SEL and the National Standards

There may be no better classroom inside a school than the music classroom for SEL to flourish. Few other subjects involve social skills to the extent that music does, or have been as long associated with emotion. Although many schools have yet to institute a formal social learning program, and the National Standards for Music Education do not yet incorporate the social content of music learning, many would agree that it holds an important, relevant place in the music curriculum. Certain teachers intuitively teach social skills through their music curriculum, and many of their students acquire social skills as a natural byproduct of the music content they study. Yet imagine the possible positive effects of building SEL deliberately and purposefully into lesson objectives, instruction, and assessments, a district music curriculum, or even the National Standards for Music Education.

It may seem overwhelming in light of the challenges we face teaching the National Standards to all learners, with limited time and budgets, but music and

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**FIGURE 1**

**Highlights of the Socio-Emotional Learning Movement.**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NEE DEVELOPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>Salovey and Mayer develop the first Emotional IQ test.</td>
</tr>
<tr>
<td>1997</td>
<td>Collaborative for the Advancement of Social and Emotional Learning (CASEL) was established for SEL and service learning.</td>
</tr>
<tr>
<td>1995</td>
<td>Daniel Goleman publishes his book Emotional Intelligence, coining the term (EI). He discusses socio-emotional learning and outlines competencies. Peter Salovey and John D. Mayer continue to write articles on SEL and emotional IQ.</td>
</tr>
<tr>
<td>1990</td>
<td>Peter Salovey and John D. Mayer write a seminal journal article in 1990 on the topic of “emotional intelligence.”</td>
</tr>
<tr>
<td>1989</td>
<td>Concept of “Emotional Literacy” is first used as part of the New Haven Social Development Program in New Haven, Connecticut, Public Schools.</td>
</tr>
<tr>
<td>1983</td>
<td>Howard Gardner develops his model of Multiple Intelligence, including both Interpersonal and Intrapersonal intelligence (Frames of Mind).</td>
</tr>
</tbody>
</table>

From a historical perspective, the music education movement has been described by guest on July 17, 2013 mej.sagepub.com Downloaded from mej.sagepub.com by guest on July 17, 2013.
FIGURE 2

Supplemental Resources on Socio-Emotional Learning.

Books

Videos
- Child Development Program’s Caring School Community Program, based in Oakland, California. Brief videos at: http://www.devstu.org/caring-school-community

Websites
- http://www.incredibleyears.com/ (“The Incredible Years” Curriculum Series for Parents, Teachers, and Children) in grades pre-K through grade 3. Uses puppets to model appropriate behavior, teach school rules, and praise children who are doing well. Role-play and videotaping also used. (University of Colorado–Boulder’s Center for the Study and Prevention of Violence).
- http://www.prevention.psu.edu (PATHS: Providing Alternative TThinking Strategies Program), consists of a curriculum for grades 1–6, the College of Health and Human Development at Penn State University.
- http://www.responsiveclassroom.org (Northeast Foundation for Children’s “Responsive Classroom” Program), based in Turners Falls, Massachusetts. Program advocates that the social curriculum is as important as the academic curriculum. Includes classroom and schoolwide practices.
- http://www.therulerapproach.org/index.php/events/ (The Ruler Approach) an evidence-based SEL program developed at Yale University. Lists national workshops being offered.

SEL go hand in hand. Social behavior constitutes music’s very core, allowing SEL skills to be taught through the music curriculum, rather than in addition to it. At all levels, music brings people together. We can look ahead in the short term to the ways in which social learning can strengthen our secondary music ensembles, or look much farther ahead to the ways in which social behavior will ultimately shape the relationships our students will have throughout their entire lives. Either way, it is up to us to discover the “rainbow shirts” in our music classrooms and to show our students that in music, beads are as important as yarn.

Notes
1. Teacher and student names used in this article are all pseudonyms for reasons of privacy and confidentiality.
7. Ibid., 20.
Universal design is “A concept or philosophy for designing and delivering products and services that are usable by people with the widest possible range of functional capabilities, which include products and services that are directly accessible (without requiring assistive technologies) and products and services that are interoperable with assistive technologies.” (Assistive Technology Act of 1998, Section 3 (17); IDEA 2004).

Topics:
Background: Universal design
Overview of principles of universal approaches
Applications for music therapy

Universal Approaches: Definitions and Principles

“The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.” (Ron Mace, Center for Universal Design, North Carolina State University). Universal Design of Instruction (UDI) Principles, Center for Universal Design (CUD), http://www.design.ncsu.edu/cud/.

1. Equitable use. The design is useful to people with diverse abilities.
2. Flexibility in use. The design accommodates a wide range of individual preferences and abilities.
3. Simple and intuitive use. Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
4. Perceptible information. The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities. Example: Spoken sequence of instructions is also presented visually.
5. Tolerance for error. The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. Low physical effort. The design can be used efficiently, comfortably, and with a minimum of fatigue.
7. Size and space for approach and use. Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.

UDL is “framework for designing curricula that enable all individuals to gain knowledge, skills, and enthusiasm for learning. UDL provides rich supports for learning and reduces barriers to the curriculum while maintaining high achievement standards for all.” Universal Design for Learning (UDL) Framework, Center for Applied Special Technology, CAST http://www.cast.org/udl/.

I. Multiple means of representation (options for perceiving and comprehending information).
II. Multiples means of action and expression (options for learners to navigate a learning environment and express what they know).
III. Multiple means of engagement (options to capture learner’s interest, challenge appropriately, and motivate).

Selected resources:
Adamek, M.A., & Darrow, A.A. (2010). Music in special education. Silver Spring, MD: AMTA. (Chapter 4)
Session Objectives:
(1) Participants will be able to identify the essential components of Response to Intervention (RTI).
(2) Participants will be able to articulate the key terminology associated with RTI.

This session will cover:
- The key features of RTI
- The RTI team process
- Client progress monitoring
- The 3 Tier model
- Approaches to RTI for music therapists
- Types of assessments

Definition: Response to Intervention (RTI) is a multi-tier approach to the early identification and support of students with learning and behavior needs. (RTI Action Network)

Contextual Issues:
- EHA: Equal access; LRE; Themes (Child Find, Placement); Impact on general and special education
- IDEA (2004): Academic outcomes in general education settings; Research-based instructional strategies; Flexible funding; Eligibility for special education services

Key Ideas:
- System of research-based instruction in general education classroom
- Universal screening; benchmarks
- Interventions of increasing intensity
- On-going assessment; data-based decisions.
- Parents; Teams and Roles

School-wide Teams:
- “Navigation” Team: Administrator, members from other teams
- Grade Level Teams: Classroom teachers
- Core (Support) Team: Specialists
- Evaluation (Individual) Team: Administrator, members from other teams

Selected resources:
Hot Topics in Special Education:  
Music Therapy Practice and Self-Determination for Students With Disabilities

Mary Adamek  
School of Music  
The University of Iowa

Alice-Ann Darrow  
College of Music  
The Florida State University

Judith Jellison  
Butler School of Music  
The University of Texas at Austin

Session Objectives:
(1) Participants will be able to define self-determination as it relates to students with disabilities.
(2) Participants will be able to articulate the skills students with disabilities must possess in order to engage in self-determination.
(3) Participants will be able to articulate ways music therapists can promote self-determination in their practice.

This session will cover:
- Self-determination theory
- Definition of self-determination as it applies to students with disabilities
- The component elements of self-determination
- Essential characteristics of self-determined behaviors
- The importance of promoting self-determination in students with disabilities.
- Selected research in self-determination
- Description of strategies and methods that will enable music therapists to promote self-determination in their clinical practice with students who have disabilities

Definitions:
- Self-determination theory (SDT) is a broad framework for the study of human motivation and personality. SDT assumes that individuals have tendencies toward growing, mastering ambient challenges, and integrating new experiences into a coherent sense of self; social and cultural factors can support or undermine an individual’s sense of volition and initiative as well as their well-being and quality of performance. Basic psychological needs (autonomy, competence, relatedness) must be nurtured and satisfied for healthy development and functioning.

- For purposes of education and rehabilitation, “self-determination is 1) best defined in relationship to characteristics of a person’s behavior; 2) viewed as an educational outcome; and 3) achieved through lifelong learning, opportunities and experiences.” (Wehmeyer, 1996).

Contextual Issues:
- Quality of life; Deinstitutionalization movement; IDEA and Transition

Self-Determined behaviors promote – Autonomy – Self-Regulation – Self-Realization – Empower individual to make things happen (causal agent)

Components of Self-Determination
- Choice making
- Problem solving
- Decision making
- Goal setting and attainment
- Self-observation and evaluation
- Self-advocacy and Leadership
- Self-awareness
- Self-efficacy
Selected references:


SD Assessment information available at The University of Oklahoma –College of Education http://www.ou.edu/content/education/centers-and-partnerships/zarrow/self-determination-assessment-tools.html