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The Inclusive Orchestra: Adapting String Instruments and Instruction for Musicians with Special Needs

## **Introduction**

In the field of music education there are key distinctions from which teaching and learning are very different from other educational settings. One of the most notable qualities is apparent with regard to the teaching of orchestra and string instruments, especially as part of special education programs. Various studies have yielded results related to several adaptations and modifications for students with disabilities. In reviewing the literature, I have found three general categories: instrumental adaptations, general teaching strategies, and teaching strategies for specific disabilities. These findings were influenced by the article *Students with disabilities in the string classroom: An integrative review*, by Lori Gooding and Olivia Yinger.

## **Instrumental Adaptations**

Instrumental adaptations can be used to assist the differently abled on a deep variety of instruments, including the major orchestral string instruments. Many adaptations are specific to individual instruments, yet there are also general concepts that have success with each. These general adaptations can be separated into adaptations to the bow or the instrument itself.

As for the instrument itself, one of the first things that one may do is change the order of the strings. For instance, the order of the strings on the violin from lowest to highest in pitch are G, D, A, and E. If you are playing a song that is only using the D and A strings, you can move them over one spot to make them more accessible. The new order of the strings would then be G, E, D and A, allowing the student to have to raise their arms lower to play the strings. A second adaptation is placing markings on the fingerboard of the instrument to act as a visual cue for the musician. Being able to see the distances between fingers must be placed can be useful for some students when they have trouble maintaining hand positions. These can also act as a textile aid to the instrument, as one is able to feel where the markers are

on the instrument. This is a very inexpensive adaptation that can be done quite quickly, so the advantages for public schools are clear.

When making adaptations to the bow, one of the first things that one should do is use a bow grip to help the student form the proper hand position and maintain their grip. Bow grips come in many different forms, ranging from very simple plastic-made devices that slide onto the bow, to more in-depth 3D printed devices. These are mainly used if a student has fine motor skills impairments, and/or has a difficulty retaining contact with their hands. The 3D printed grips can be adapted for many different physical disabilities. These can be modified for students with limb amputations. For instance, in the case of a student that is missing their hand, a grip would need to be made that can securely wrap around the lower part of their arm. A second adaptation that can be applied to the bow is the use of place markers to assist with bow distribution skills. These are pieces of tape that are put at different points of the bow to provide a visual aid for distribution. They are typically placed at the tip, middle, and frog of the bow. They can also be different colors, so that students learn to play near the designated color in place of a part of the bow.

While these adaptations work for all instruments, there are also some that are for specific instruments. For instance, with the cello, there is a device called the “Cello Stand” that allows for the instrument to lie horizontally on the floor. This, then, allows the student to play the instrument with their feet instead of their hands. This can be used for musicians who are arm amputees, or people who have limited arm movement, but still have a desire to play the cello. The toes and feet have many muscles in them that allow the performer to learn music to a high standard. An adaptation that can be used specifically for the violin or viola is changing the playing position of the instrument. Instead of playing horizontally on one’s shoulder, it can be turned vertically and played like a cello.

### **Classroom Accommodations**

Along with these methods of adapting instruments, there are also several accommodations that can be applied to the entire classroom to assist students with various disabilities. Primarily, adapting the difficulty of their music by changing the rhythms or notes of the songs being taught. There are many ways

to adapt the rhythms of pieces, and still have the student feel equally involved. The most common adaptation is performed by simplifying the rhythm in question from the main rhythms that the rest of the class is playing. This is commonly done by cutting the number of notes played in half. For example, if the piece called for eight notes in two beats, the adaptation would be to play four notes in two beats. Doing this provides the illusion of playing the same part as the rest of the class without disrupting the sound of the piece. When adapting the notes of the piece, a common method is to have students play the baseline instead of a melody. The baseline in music is typically much more playable as it will have notes that are more simple and involve less motion and dexterity.

Another classroom accommodation is to place struggling students near the teacher during instruction. This proximity will allow the teacher to monitor students with behavioral or instrumental issues. Along with placing the student near the teacher, the student can also be positioned near another student who is willing to help. Using a peer-buddy system is useful as it allows the teacher to worry less about students with special needs, while giving the helper student the opportunity to work on their leadership and teaching skills. It is important not to expect the student who is the best player to be this helper, for the student who is willing and knowledgeable enough to teach them the correct concepts may be more helpful. Helper students must be aware of the objectives of the class and other useful techniques in order for this method to be successful.

### **Teaching Strategies for Specific Disabilities**

While there are general things that you can do for any struggling student, there are also strategies that can be applied to handling specific disabilities. For students with hearing impairments, one of the first things that (researchers) discovered is complications with pitch sensitivity issues. If the student has an aversion to higher noises, they should not play the violin or viola. If the student does not like lower noises, they should not play the cello or the bass. For some students, there have been cases where playing the violin has been very assistive with their hearing, as the violin is held between the shoulder and the jaw of the musician, the vibrations from the instrument move through the jawbone while someone is playing. This can sometimes help the performer hear what is happening as the vibrations are sounding close

enough to their ear. Along with these methods, one of the most common strategies is to use hearing aids when available. These aids can be synced either with a microphone used by a teacher or a microphone placed by the necessary instruments.

The easiest thing to do for students with difficulties in fine motor skills is to encourage them to play the cello or the bass. As these two instruments have larger spacing between notes, performance levels of playing will be more obtainable for students. Along with this, the bow grips for these instruments are easier to perform and, due to their large size, easier to grasp.

There are several things that can be done in the classroom for students with visual impairments. The first would be to provide the necessary students with recordings of the music they are playing. This provides the student with a model for learning to play a song. Additionally, if another student is willing, it can be useful to have the two students go into a practice room during class instruction and echo patterns from the song. This should not be done with great frequency, for a student may feel secluded from the larger group. This method is most useful at times when there is a complicated song and additional help is needed. Along with these methods, there are also ways to print music in braille. Braille music can notate the same notes as well as octaves and ranges. Unfortunately, this is somewhat expensive and can sometimes be difficult for teachers to find.

Students can have various forms of intellectual or physical disabilities, so it is important to remember that they will each need their own modifications. One of the most common methods is to have smaller group lessons or private lessons. This will allow the teacher to easily focus on struggling students. Again, fellow classmates may be the solution to some classroom difficulties, as they can help throughout sessions with menial tasks, so the teacher does not have to go back and forth between the class and the student. Trying to use limited forms of teaching can assist with students not becoming overwhelmed. This could be done with rote teaching, teaching that is done mainly by echoing aural/oral skills. This could also be solved through the use of flashcards for rhythm patterns and pitch patterns. Maintaining simple rehearsal language can also be helpful, so the process does not become too confusing for the student. For example, when discussing terminology in class, you may not want to say the correct musical term, but,

instead, communicate with a simpler term. Instead of saying “forte,” say “loud.” However, it is important to balance the needs of all the students in class, as some may benefit from learning music vocabulary. In that case, begin by saying the translation, then the proper term, and then say the translation again.

## **Conclusion**

In the world of education, there are many ways to connect different fields of study so that everyone can be involved. Regardless of the student’s disability, there are many ways to incorporate many different learners into the classroom. These can be broken down into manipulating the instruments themselves, or the teaching strategies are affiliated. It is important to remember that two students who have the same disability may not benefit from the same adaptations and modifications. Every student is different, yet each needs to be taught in ways that allow them to learn most..

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