ADHD, ASD, And Aspects of the Music Classroom

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**Introduction**

As I work towards my future career as a music educator, it is my responsibility to be knowledgeable about the first INTASC standard. To develop myself professionally, I researched the following topics as they relate to developmental education: intellectual disabilities and ADHD.

**Developmental Research**

**Differentiating the effects of ADHD and other outside influences on academics**

Children with ADHD are unable to focus on a mental task for more than a few minutes (Berk, 2012). In his article, Andrew J. Martin tries to differentiate the effects ADHD has on schooling, and the effects of other outside influences, such as socio-economic status, previous academic success, and motivation. To do this, he asked 136 students, whose average age was 14.32 years old, with ADHD and 3779 non-ADHD students, whose average age was 14.20 years old, questions about who they are, including personality and background (Martin, 2014). He then used all this data to look for patterns of adversities in school for students that only pertained to those with ADHD. He found that there were four adversities that students with ADHD tended to have. These included incompletion of schoolwork, school suspension, school expulsion, and changing schools (Martin, 2014). Martin says that these behavior related problems correlate well with the knowledge that ADHD makes it much harder for students to have inhibitions about their actions (Martin, 2014).

**Instructional Decision**

Each student will have different things that slow down their learning, and it is my responsibility to understand a variety of factors that contribute to this and be able to adapt my teaching to help each student succeed (AG 3.16). Being unable to focus is something that prevents students ADHD from doing things like completing work and managing their own behavior. I will use the information from this article by trying to give some kind of incentive for ADHD students to complete their work. I will also be as patient as I possibly can be in encouraging them to engage in their coursework to get it finished.

**I feel that it would also be beneficial to my students if I understood some of the causes and effects of a variation from the norm, like a student with ADHD (AG 1.2). I feel that sometime during my career, having students with some kind of burden like ADHD will inevitably. It is part of my responsibility to understand the possible reasons they do the things they do, so I can also shape my teaching around their personal learning needs.**

**Developmental Research**

**ADHD and Implicit Learning**

Children with ADHD are known to have difficulty with memory and ignoring information that is not important (Berk, 2012). In their experiment, they ask children with ADHD and a control group from the Washington D.C. area to perform tasks that involved their ability to predict the order to perform specific tasks (Barnes, K., Howard, J. H., Howard, D. V., Kenealy, L., & Vaidya, C. J., 2010). They found that there were some differences in the rate of implicit learning between children with ADHD and the control group. The ADHD group showed inconsistent ability to follow along in sequence-learning as compared to the control group (Barnes et al., 2010). Barnes and her colleagues seem to believe that this stems from the differences in developing ADHD brains from normal brains. And because of this, it is unusual for children with ADHD to subconsciously learn things as quickly as non-ADHD children (Barnes et al., 2010)

**Instructional Decision**

In order to promote learning in students with ADHD or other kinds of disabilities, it is important to understand some of the ways they can learn (AG 1.5). One big thing that I think I can take away from this is that students with ADHD will most likely struggle with learning things passively. This, in combination with their difficulties in focusing, means that in order for me to be most effective as an instructor, I will need to constantly draw their attention to what they need to learn and encourage active efforts on their parts to commit it to memory**. I suspect that in the field, this will primarily manifest as me reminding the student or students verbally of the work that they have to do.**

**Developmental Research**

**ADHD and Difficulties in Reading/Spelling and Math**

ADHD makes it difficult for children to have good reasoning and problem solving skills in academic settings (Berk, 2012). A deficiency in these kinds of skills would be detrimental to the abilities of ADHD students in their abilities to learn math and become better spellers. According to a study, 60% of people who live with ADHD also suffer from some other kind of disorder, whether it be some kind of emotional disorder or learning disorder or anything else (Czamara, D., Tiesler, C. T., Kohlböck, G., Berdel, D., Hoffmann, B., Bauer, C., & Heinrich, J., 2013). With knowledge like this in mind, Czamara and her colleagues looked for correlations between children with tendencies similar to children with ADHD, such as an inability to sit still and difficulty focusing, and their abilities on simple math and spelling tests (Czamara et al., 2013). They found that children who showed symptoms similar to ADHD were at a significantly higher risk for difficulties in math and spelling than children who didn’t show those symptoms and that in some instances, females with symptoms are at more of a risk than males for these difficulties (Czamara et al., 2013).

**Instructional Decision**

As a future instructor, it is part of my job to create an environment where students will feel comfortable with themselves and their peers (AG 5.1). I feel that part of this means that I should not create an environment where there is only one good way to do everything. Even though I’m not planning on becoming an english or math teacher, I still need to be able to understand that this might be a struggle for some students and I need to create an environment that will adapt to using students strengths as a springboard to increase their understanding of new material. Students with ADHD symptoms probably aren’t going to be as comfortable with spelling or numbers as other students. To accommodate this, I will use a variety of ways to explain something, understanding that giving an explanation of something like scales with just numbers, for example, might not be enough **(AG 2.5)**.

**Developmental Research  
Language and Theory of Mind in Children with Autism Spectrum Disorder (ASD)**

Whyte and her colleagues attempted to find correlations between language ability and theory of mind with children who have been diagnosed with ASD. They researched a predominantly non-hispanic, Caucasian group of children from Pennsylvania, ages 5-12, and tested their abilities to understand language and read other’s emotions (Whyte, E. M., Nelson, K. E., & Scherf, K., 2014). **The total number of children with ASD was 26, and this group of children was compared to two different control groups. One control group consisted of 26 children who were matched with children in the ASD group based on their physical ages. The other control matched children in the ASD group based on their Language age, which was based on results from a syntax test**. These children were in an age range where they begin to develop more complex and setting-specific concepts of language applications (Berk, 2012). They found that language ability and theory of mind are important for a child with ASD, as compared to typically developing children, and their ability to understand idioms in language (Whyte, et al., 2014).

**Instructional Decision**

Children with ASD must overcome more obstacles than their non-ASD peers to succeed in school. And as a future instructor, I must be knowledgeable of the aspects that they may be struggling with. This would include theoretical aspects, like the theory of mind, and how it affects linguistic development (AG 1.1). I understand that ASD makes it much harder for children to imagine the way somebody else feels, and even though it is not clearly known why, this affects their ability to understand idiomatic language. Because of this, I will do what I can to help my students with ASD, as well as those without, on both of these fronts. I will try to encourage compassion, by asking students to imagine how the victim of their actions feels. This is a common practice in parenting that eventually fosters compassion, which I feel will also lead to easier classroom management ability and prevent future problems (AG 5.5). To address the problem of language, I will be careful when using similes in demonstrations, if I use them at all. I will make conscious efforts to address my students with direct language, especially those with ASD, in order to make it as simple as possible for them to understand new information.

**Developmental Research**

**Extracurricular Activities’ impact on School Attachment and Learning Goal Orientation**

According to Fischer and Theis, There has been plenty of research regarding the impact of extracurricular activities on academic achievement. However, Fischer and Theis wanted to add on to this by exploring the impacts extracurricular activities could have on school attachment and learning goal orientation. Learning goal orientation refers to a student’s attitudes toward the learning process, while school attachment refers to student’s attitudes toward the school setting as a whole (Fischer and Theis, 2014). Their sample included 3230 students who regularly attended German all-day schools who began the experiment as 5th graders, and the same sample of students participated again when they were in 7th and 9th grades. Their study compared those who had been in extracurricular activities for at least two of those times and those who had been in extracurriculars at one or less of those times. They also accounted for the fact that the quality of some schools’ extracurriculars may not have been as high as others (Fischer and Theis, 2014). As they had hypothesized, they found that students who participated in extracurricular activities that challenged them academically also experienced positive development in learning goal orientation. Also, students who participated in extracurriculars that encouraged positive social interactions had a greater sense of school attachment.

**Instructional Decision**

As a music teacher, I understand that what I will be teaching is not considered to be as much of a core part of the overall curriculum students will be receiving. Music is usually considered to be some kind of extracurricular. And it is important for me to understand how the experiences I’m giving my students will affect and connect with what students are doing and learning in other classes (AG 2.3). While I must make sure that no student is ever too far behind, I will also try to keep the material challenging enough to keep their interest in learning high. I will work to find this careful balance as soon as I am able. In order to increase school attachment, I will avoid negative social interactions with my students. After all, music is meant to be enjoyed and shouldn’t be a kind of punishment anyway.

**Developmental Research**

**Technology in Music Learning**

The use of technology worldwide has increased tremendously over the last few decades. This started with technology for personal use, and this eventually led to technology becoming a normal part of every classroom. If a kindergartner uses a compute for writing, they will tend to make fewer errors than if they were using a pencil and paper (Berk, 353). Ho Wai-Chung gathered data about Chinese students feelings toward information technology usage as it relates to music education. He wanted to find out if technology affected students’ motivations when it comes to learning music, what music-related activities students liked using technology for, and what kinds of music would students like to use technology to learn about. The sample included 1741 chinese students between the ages of 11 and 16, all of whom answered a questionnaire. 68 students were also interviewed how they felt technology would be best used in a music classroom. The results showed that 48.9% of students did not regularly use technology to research music information. However, the majority (66.2%) felt that more technology should be implemented into music lessons. And in a classroom, 59.3% believed that technology could be used to increase their motivation in learning music. Only 7.5% thought that technology would not add to a music lesson.

**Instructional Decision**

I feel that this data is fairly clear. Technology improves students’ perception of their music class. Part of my job will be to understand technology’s place in the classroom so that it adds to my students’ experiences and does not take away from it (AG 2.11). I understand that there is a chance that I will be teaching at a school that won’t have the resources to include very much technology in classrooms. But if I am able, I will work to incorporate technology into my regular teaching. This could include listening to recordings of music, or showing diagrams and illustrations of things like fingering charts and sheet music on a projector screen.

I could also technology to vary the way the learning environment feels. Not all students learning their best through one single sense. Technology can easily provide a new way to engage students’ visual and auditory senses by creating a virtual environment that encourages learning through these senses (AG 5.4). Technology can also make it possible for students to interact with their learning, which may be the best way for some of them to learn.

**Developmental Research**

**Children with ASD and their use of Gazing**

Children derive their understanding of words very often through social cues. An example of this would be when I child hears a new word, they will look where the person who said the word is looking, then evaluate the reliability of their gaze. Children do this all the time when they are building their vocabulary (McGregor, K. K., Rost, G., Arenas, R., Farris‐Trimble, A., & Stiles, D., 2013). It is known that children who fall into the ASD spectrum tend to be slower and constructing meaning from words they know and discovering meaning in words they don’t know and according to Berk and her research, children with autism cannot use the unspoken social cue of a gaze to help in understanding what someone else is saying (342). However, McGregor and her colleagues created an experiment to see how children with ASD and normally developing children compare when using contextual clues to find meaning in words, which, in this case, was a person’s gaze. 30 children with ASD and 43 without, all around 11 years old, were shown a series of pictures of 3 objects on a table, with a woman looking at one of the objects. The subjects then heard a word that corresponded with one of the objects on the table. The woman’s gaze was sometimes directed toward the object that was heard and sometimes not. The subjects were asked to click on the object that was heard, and their accuracy and response times were recorded. Some words that would be more familiar to young children as well as words that weren’t as familiar to children were both used (McGregor et al., 2013).

The results showed that ASD does not seriously affect a child’s ability to use gaze to understand words, as compared to typically developing child. Both groups of subjects responded to affirmative gazes faster than contradictory gazes. Both groups also had similar accuracy and response times in all variations of the gaze, which shows that they also had similar results in judging the reliability of the gaze. This means that children with ASD are just as capable of understanding language as it relates to their context as typically developing children.

**Children with ADHD and Expression in Writing**

When children are actively involved in becoming literate, this is known as emergent literacy. This happens when children pretend to write things down, or write according to their stigma of written communication during play (Berk, 341, 343). Previously, there had been only a few studies about the writing skills of children with ADHD. The majority of studies on children with ADHD regard their reading and math skills, but not their writing. So Anna Maria Re, Martina Pedron, and Cesare Cornoldi conducted a study to examine the expressive writing abilities of children suffering from ADHD. The study compared two groups of 24 children each on their ability to describe a picture of a zoo scene. They were given ten minutes to complete the task. One of the groups was made up of children whose teachers had reported that they displayed symptoms of ADHD, and the other group was a control group. Every child lived in Sicily, Italy, and spoke Italian as their first language (Re, Pedron, Cornoldi, 2007).

The results found that the control group had much greater command of their written language abilities. Of the four categories that the children were assessed, adequacy, structure, grammar, and lexicon, the control group scored higher than the ADHD group in all of them. The control group also generally wrote more than the other group, using, on average, 68.21 words in their descriptions while the group with ADHD symptoms wrote 51.79 words on average. The control group also made four times fewer writing errors than the ADHD group (Re et al., 2007).

**Goals**

**Engagement**

It is important for students to be engaged in their own learning because that when they are able to learn the most. Allowing the students to be engaged in the classroom better allows them to understand the application of new information, while also satisfying the simple human need to satisfy curiosity by exploring the possibilities that the information allows. Activities like discussion and reflection allow the students to continue processing what they have just learned by allowing the them to add on their own thoughts that can be added on to the new information. Students can also create imaginary scenarios where the new information can be applied, which will make the information that was learned "stick" more in the students' memories (AG 5).

One weakness that I feel that I have is that I will struggle to find new ways to keep the lessons fresh and engaging for my students. As a future music educator, I know that it is very easy to keep students engaged by encouraging them to play their instruments and rehearse music with them. But I don't know how much I can vary from that specific application of information. In order to increase my understanding of teaching, I feel that increasing my understanding of my content knowledge and students' thinking is beneficial. I have considered eventually pursuing a masters degree in something like music theory or developmental psychology. These are areas that I feel would have a real practicality in my teaching. I will also stay current with developments in music education by remaining a member of the National Association for Music Educators (NAfME), which will allow me to stay up-to-date on what music teachers are learning and sharing in the Music Educator's Journal. This will allow me to stay more knowledgeable about my field of study as I continue on in my career.

**Expertise**

My personal definition of expertise is the ability to be put in any given situation within a field of work, and know what to do. That includes knowing how to fix problems, which problems need to be fixed first, or even knowing that it is best to not adjust the situation. In a classroom setting, this could be something like teaching the old content in a new way to increase students' understanding, or knowing how to handle conflict in the classroom. It is important for a teacher to be knowledgable of the learning process because in order to be effective in a classroom, they will need to accomodate the needs and abilities of students who are learning, and this can only be done if the instructors have a pre-existing knowledge base of how learning works. Teachers need to know the system, that is, how students learn, in order to work the system, becoming a more effective instructor (AG 2).

It is important for professionals to understand how students develop because their development affects their learning. Students abilities in learning grow and become more complex over time. If we are truly experts in our fields, we can have a baseline of abilities that students should have at their given ages so we can adjust the lesson to fit their needs to make themselves successful.

**Context**

Context, to me, means having a clear understanding of what affects the students' life outside of the classroom and how those kinds of things will affect their performance in the classroom, as well as being able to adapt my teaching in response these factors on an individual basis. This could be current events, their home life, or any strengths or weaknesses that they bring into their learning. It is important to be knowledgable of student contexts because learning, as research shows, is largely a direct products of students' active involvement. Being able to adapt to any given student's thinking is key to effective teaching. (AG 1)

It is important to use individual's strengths as a basis for growth and errors as an opportunity for learning because learning is largely based on the experiences that we, as educators provide for them. Learning is not just teachers reciting information. Learning is students using information or exploring new ideas in order to solve problems, and how students do that is affected by their context.

I feel that this whole area is a weakness of mine because I have not had much experience with it. I went to a high school with a large hispanic population, which would provide diversity as far as cultural background is concerned. However, I spent, and still spend, almost all of my time with people who have a fairly similar background as me. I feel that in order to be more adaptive to the world my students are learning in, I should be more aware of what is going on in the world, and increase my knowledge about how to respond to it. I feel that something as simple as watching some of the news would definitely increase my understanding of the world as it is. And in order to increase my knowledge of how to respond, I will pay close attention to what the Music Educator's Journal has to say about how we should  respond to different students' situations, as a result of my membership in NAfME.

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All-Grade Standards

Standard 1, Student Development and Diversity: Teachers of grades P–12 have a broad and comprehensive understanding of student development and diversity and demonstrate the ability to provide instruction that is responsive to student differences and that promotes development and learning for all students, including:

* 1. major concepts, theories, and processes related to the cognitive, linguistic, social, emotional,

physical, and moral development of students in grades P–12, and factors in the home, school, community, and broader environment that influence student development

* 1. knowledge of students' developmental characteristics and developmental variation, and the

ability to use this knowledge to inform instructional decision making and promote student success

1.5  knowledge of types of exceptionalities, including high ability and twice exceptional; their

characteristics; and their implications for development, teaching, and learning; and the ability to use this knowledge to promote learning and development for students with exceptionalities

Standard 2, Learning Processes: Teachers of grades P–12 have a broad and comprehensive understanding of learning processes and demonstrate the ability to facilitate student achievement, including:

2.3  knowledge of the important roles of play, social interaction, and hands-on experiences

in young children's learning, and the ability to use these processes to help children construct knowledge and develop problem-solving and other skills – early childhood, special education

2.5  knowledge of how student learning is influenced by different types of instructional

practices and teacher behaviors, and the ability to use this knowledge to promote learning for all students

2.11  knowledge of how digital-age tools and environments influence learning processes and

outcomes, and the ability to use this knowledge to improve teaching effectiveness and learning outcomes

3.16  knowledge of factors and situations that tend to promote or diminish student

engagement in learning, and the ability to apply skills and strategies for promoting students' active engagement and self- motivation

Standard 5, Learning Environment: Teachers of grades P–12 have a broad and comprehensive understanding of student learning environments and demonstrate the ability to establish positive, productive, well-managed, and safe learning environments for all students, including:

5.1  the ability to create safe, healthy, supportive, and inclusive learning

environments, including indoor and outdoor environments, that encourage all students' engagement, collaboration, and sense of belonging

5.4 knowledge of the characteristics and benefits of virtual learning environments, online

environments, face- to-face environments, and hybrid environments, and the ability to work effectively in different types of environments to ensure student learning and growth

5.5  knowledge of developmentally appropriate classroom management approaches and

positive guidance techniques, including relationships between specific practices and student learning, attitudes, and behaviors, and the ability to use this knowledge to create an organized, positive, and productive learning environment that maximizes students' time on task; facilitates learning; and encourages student self- regulation, responsibility, and accountability