

# AUTISM SPECTRUM DISORDER RESEARCH

## And Its Implications For Music Teachers

*By Derek Kealii Polischuk*

**Derek Kealii Polischuk** is associate professor of piano and director of piano pedagogy at the Michigan State University College of Music. A recipient of MSU's Teacher-Scholar Award, Polischuk is the founder of the "Celebrating The Spectrum" Piano Festival for students with ASD.



**H**igh-Functioning Autism is an autism spectrum disorder that is distinguished by difficulties in social interaction and nonverbal communication, along with restricted and sometimes repetitive patterns of behavior and interests. Generally, those with High-Functioning Autism have normal or near-normal linguistic and cognitive development. Children with learning disabilities, such as High-Functioning Autism, in the modern music studio

pose an exciting challenge to music teachers, requiring the instructor to use a variety of teaching strategies to reach these students.

In a study of public school teachers by Val Cumine, Julia Leach and Gill Stevenson,<sup>1</sup> a majority of teachers believed they had not received the proper training to instruct children with High-Functioning Autism. In my informal polls of piano teachers, I would guess the same feelings exist among most piano teachers. I hope this review of literature, mostly

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gleaned from the field of teacher education, will help music teachers expand their repertoire of research-based strategies for teaching students with High-Functioning Autism.

## What The Research Says

The body of research for Autism is significantly larger than that for High-Functioning Autism. Although High-Functioning Autism and Autism differ with regard to early cognitive development and language acquisition, similarities do exist. Because of these similarities, some teaching strategies put forth in Autism research are applicable to working with students with High-Functioning Autism.

The Behaviorist Theory, or “Behaviorism,” is an approach to psychology primarily concerned with the observable and measurable aspects of human behavior while emphasizing changes in behavior that result from stimulus-response associations made by the learner.<sup>2</sup> Regarding High-Functioning Autism, “Maladaptive behavior is viewed as essentially the result of (1) a failure to learn necessary adaptive behaviors or competencies, such as how to establish satisfying personal relationships, and/or (2) the learning of ineffective or maladaptive responses.”<sup>3</sup> “A failure to learn necessary adaptive behaviors or competencies, such as how to establish satisfying personal relationships” describes students with High-Functioning Autism very well. People with High-Functioning Autism sometimes do not detect social clues, such as a nonverbal facial expression meant to convey frustration. Missing nonverbal social cues can result in a missed lesson associated with a given experience.

While individuals on the Autism Spectrum sometimes have difficulty

determining another person’s emotions and desires, they are often times very aware of their own. This can be very useful in a music lesson context if an instructor takes the time to determine what is pleasing to a student. For example, if a student with High-Functioning Autism finds particular pleasure in learning to play the music from *Star Wars*, a teacher should take note of this, using this desired activity as a reinforcement for a lesson activity that the teacher wishes to accomplish, such as the practicing of scales.

## Designing Teaching Strategies Based On Research

The characteristics of High-Functioning Autism are often times masked by above-average IQ scores. Because of this, teachers may presume a student is capable of more than is being produced. When a music teacher does not understand the specific needs of a High-Functioning Autism student, that teacher may not as readily search for strategies to reach this student. Additionally, students with High-Functioning Autism frequently find social situations distracting and overwhelming. Group music instruction, chamber music and work in large ensembles may be so challenging for a student with High-Functioning Autism that learning goals may be lost completely. The advantage of applied one-on-one music instruction is a strength that should be harnessed by music teachers. While public education involves consistent socialization with group assignments, passing periods, lunch breaks and recess, the private controlled nature of a music lesson can be a comfortable and native environment for a student with High-Functioning Autism.

Patricia Romanowski Bashe and Barbara L. Kirby report,

If asked to design an environment specifically geared to stress a person with Asperger’s Syndrome, you would probably come up with something that looked a lot like a school. You would want an overwhelming number of peers; periods of tightly structured time alternating with periods lacking any structure; regular helpings of irritating noise from bells, schoolmates, band practice, alarms, and crowded, cavernous spaces; countless distractions; a dozen or so daily transitions with a few surprises thrown in now and then; and finally, the piece de resistance: regularly scheduled tours into what can only be described as socialization hell (a.k.a. recess, lunch, gym, and the bus ride to and from school). It’s a wonder that so many children with AS manage to do so well.<sup>4</sup>

In many ways, the private music lesson is exactly the opposite of the school scenario described by these researchers: more often than not, no peers are present, lesson time and content can be much more flexible than in a school, potentially irritating ambient noise can be limited and controlled, and a sense of calm can be created, controlled and supported by a caring teacher in an intentional way.

Karen Williams<sup>5</sup> describes how critical it is to minimize stress and worry in a student with High-Functioning Autism, and the educational advantages such an approach can have. Williams emphasizes the fact that minimizing transitions and ensuring a predictable environment can help a student with High-Functioning Autism feel more comfortable while learning. The

researcher also recommends the student be thoroughly prepared in advance of changes in educational routines so a preoccupation regarding what will come next will not occur. Most of our music students, on and off the Autism Spectrum, experience anxiety and nervousness surrounding performances and competitions. This experience may be amplified in students with High-Functioning Autism. It will benefit their experience if these events are predictable, calm, well-run and free of last-minute changes.

While many piano students successfully switch teachers at some point in the course of their education, such changes can be particularly disruptive and stressful for the student with High-Functioning Autism. Diane Adreon and Jennifer Stella<sup>6</sup> address these types of transitions in the public school curriculum, and advocate “transition-planning meetings,” allowing the previous instructor to educate the incoming teacher on strategies that have worked for an individual with High-Functioning Autism. Additionally, the researchers suggest allowing the student to have extra time to become familiar with a new learning environment. It would benefit these students greatly if teachers would work in tandem when transferring teaching responsibilities. When geography does not permit, the use of videoconferencing software such as *Skype* or *FaceTime* could provide an opportunity for a transition-planning meeting as suggested by the researchers.

### Applied Behavior Analysis And Discrete Trial Training

Applied Behavior Analysis and Discrete Trial Training (ABA/DTT) is a teaching technique that is highly effective with students on the Autism Spectrum. Discrete Trial Training is

the science of breaking down learning into small steps that build upon each other, leading eventually to the understanding of an overall concept. Applying the principles of ABA/DTT helps a student focus on small pieces of information creating a better opportunity to complete an assignment. The logical breakdown of learning into small pieces can help a student sort through the many confusing bits of stimulus they receive throughout the day. Discrete Trial Training can be applied to music instruction through careful lesson planning by a teacher, during both the course of an individual lesson, and over a set of lessons. For example, working together with a student on the right hand only through the end of the exposition would be a much more effective small step than sending them home to practice the entirety of a Sonata movement on their own.

### TEACCH Method

An approach to Autism education that is used widely is the Treatment and Education of Autistic and related Communication-handicapped Children program. Commonly known as the TEACCH method, Sally Ozonoff, Geraldine Dawson and James C. McPartland<sup>7</sup> describe this method as a way to build upon the High-Functioning Autism child's particular memory strengths. Many students with High-Functioning Autism have the ability to remember large quantities of information on subjects that particularly pique their interest. For example, a child with High-Functioning Autism may be fascinated with jetliners and will offer as much information on the subject as an aeronautical engineer. The four main elements of TEACCH are as follows:

1. An intentionally structured classroom
2. A visual schedule of the day's activities (visual instructions and schedules help students provide security and lessen stress, which may be detractors to learning)
3. An explanation of the type and length of the schoolwork expected
4. Instructions are presented both visually and verbally

These concepts provide what the researchers describe as “scaffolding” for the High-Functioning Autism student, that is, new learning occurs with a solid support structure based on organization and visual representations.

### Wings Mentor Program

The Wings Mentor Program is a mentoring program designed to improve students' self-confidence, positively change other student's perceptions of them and improve their motivation in learning:

These are the students who rarely have homework completed, or if done, cannot find it. They are light years ahead in math, but reading below grade level. These same students may not only be able to program the computer, but they may be able to take it apart completely and put it back together. Ask them about the Civil War, DNA cloning, lasers or ancient civilizations and you might be bombarded with information and unique insights. Ask them to write about the same topic and they may produce little or nothing.<sup>8</sup>

The Wings Mentor Program addresses this problem by having a student work directly with a mentor (an obvious natural strength of the one-on-one

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nature of the music lesson). The mentor determines a particular topic the student may struggle with, while the student chooses an area of study that is a source of preoccupation for them. These topics are studied with the mentor for a period of eight weeks, at the end of which students share their projects at a “show-off night.”

The applications of the Wings Mentor Program for music study are numerous. A High-Functioning Autism student preoccupied with improvisation, but less enthusiastic about scales and arpeggios may improve their work on technical studies should their preoccupation with improvisation be cultivated. Additionally, “show-off night” activities could be integrated into studio recitals, or could replace competitions and festivals to take advantage of the strengths that our High-Functioning Autism students possess. Additionally, opportunities for High-Functioning Autism students to exhibit their knowledge in a given favorite field may provide learning opportunities for their studio colleagues, as well as opportunities to improve respect among peers.

## Scope And Sequence

High-Functioning Autism students are often times unable to generalize the skills they learn. For example, when taught a scale fingering, students with High-Functioning Autism may not understand that the same fingering could be used for fragments of the same scale in the Sonatina they are learning. Brenda Smith Myles and Richard L. Simpson<sup>9</sup> suggest that a mode of instruction called “scope and sequence” may be useful in helping students generalize concepts. Scope and sequence is defined by the authors as teaching students about specifics and basics before expecting them to learn generalized rules. In musical instruction, “connecting the dots”

from the learning of a concept in the abstract (scale fingerings) to the application (scale fingerings in a piece of repertoire) is an example of scope and sequence learning. An inability to generalize can also pose problems in basic tasks our students are expected to do. For example, a student with High-Functioning Autism may not simply begin playing in a competition setting if not told to do so. Scope and sequence research suggests that instructors give all the steps necessary to complete a task or assignment rather than assuming a High-Functioning Autism student will naturally know what comes next. For example, a competition judge could ask the student to 1) make themselves comfortable at the piano, 2) adjust the bench if they wish, 3) try out the instrument, 4) begin playing when they are ready.

One of the useful aspects of High-Functioning Autism research is its potential application to students both on and off the Autism Spectrum. Most importantly, it reminds us that each of our students is an individual with completely different learning strengths and struggles. It is essential that music teachers understand what High-Functioning Autism is. Additionally, teachers should take the time to educate themselves on teaching strategies for these students. This area of research is one that should be explored more in the field of piano pedagogy, and brought to the top of topic lists for local MTNA organizations. Local organizations would be a natural place for Autism Spectrum focus groups to form in order for teachers to continue and supplement their educational effectiveness in this field. Additionally, Autism Research as applied to music teaching is a field that could be further explored and supplemented in years to come. ♪

## Notes

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5. Williams, K. (2001). Understanding the Student with Asperger Syndrome: Guidelines for Teachers. *Intervention in School & Clinic* 36 (5), 287–298.
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