

# Teaching Piano to Children with Autism

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Children with autism require a special approach to teaching, as they have a neurological development disorder that impairs social interaction and communication skills. By using a combination of B.F. Skinner's Operant Conditioning Theory and Dr. O. Ivar Lovaas's approach to Applied Behavior Analysis (ABA) a piano teacher would not only be able to have success in teaching an autistic elementary-aged child music, but would also be able to help with their physical, social and verbal development.

While there are many therapies, teaching programs and other interventions available for families of children with autism, Applied Behavior Analysis (ABA) has proven to be one of the most successful. As described in American behaviorist B.F. Skinner's first book *The Behavior of Organisms: an Experimental Analysis* (1938), Operant Conditioning Theory was formed by finding that the consequences of certain behaviors influenced the likelihood that the behavior would occur again (Skinner, 1966). Through laboratory research and examination of the basic mechanism of behavior change (learning), Skinner was able to demonstrate that a behavior would increase when followed by a reward, such as a highly desired item. For example, when a child takes out the trash as they have been instructed to do and the parent rewards them with an allowance, the trash will most likely be taken out by the child when asked in the future because they know a reward will be presented.

In the 1960's, behaviorists began applying Skinner's theory to the development of teaching methods. Autism treatment at this time was generally based on a psychodynamic model, which offered some hope for recovery through experiential manipulations. By laying out the basic principles of behavioral science (reinforcement, prompting, fading, reinforcement schedules, extinction, shaping, discrimination and differentiation) the theoretical basis of ABA was formed (Myers, 2004).

Applied behavioral approaches were firmly demonstrating that children with autism were making great progress in behavior modification programs and these findings later made their way into professional journals, thus making the 1960's pivotal for the study and treatment of autism.

Between 1970 and 1984 Dr. O. Ivar Lovaas developed a specially designed program at UCLA for children with autism, referred to as the UCLA Young Autism Project, which

was based upon Skinner's Operant Conditioning Theory and aimed to further the development of Applied Behavior Analysis. All children in the UCLA Young Autism Project were under the age of four when they began the program. Lovaas speculated that younger children would maintain and generalize skills more easily than older children because they would be less likely to discriminate between environments. It was assumed it would be easier to successfully mainstream a young child into preschool rather than an older child into a higher grade (Lovaas, 1987). Lovaas began treating these children by using a curriculum that emphasized language development, social interaction, and school integration skills. After two to three years of treatment 47% of the experimental group (9 of 19 children) versus 2% of the comparison group (1 of 40 children) were reported to have achieved "normal functioning" (Lovaas, 1987; McEachin et al., 1993). These findings demonstrated that many children with autism could make dramatic improvement and even achieve "normalcy" with intensive behavioral treatment. "By applying operant learning principles to autism intervention, Lovaas left behind the disease treatment approach and replaced it with the teaching of observable appropriate behaviors. The focus of intervention was changed from treatment to teaching." (Lovaas, 1981).

By combining Skinner's Operant Conditioning Theory and Lovaas's theory of Applied Behavioral Analysis, a piano teacher would be able to create a curriculum to educate an elementary aged child with autism. According to Lovaas (1981) there are three general stages in Development Therapy that need to be followed when using ABA when it comes to education:

1. Beginning Stage: Learning to Learn
2. Middle Stage: Communication Skills
3. Advanced Stage: Subtle Social Skills

In the Beginning Stage of ABA Therapy Lovaas insists that sitting, compliance, remaining on task, how to process feedback and understanding cause and effect must be taught (Lovaas, 1981). In terms of working with the Beginning Stage of ABA Therapy in a music lesson a teacher could follow Skinner's suggestion about rewarding good behavior with a sticker for doing the tasks Lovaas describes, such as remaining on task during the lesson. A teacher could also encourage the cause and effect task by rewarding weekly responsibilities, such as completion of music theory homework, with a sticker or words of praise. By applying concepts from the Beginning Stage of ABA therapy in a piano lesson, an autistic child will have a strong foundation on which to further build.

The Middle Stage described by Lovaas in ABA therapy focuses on Communication Skills in which play, self-help and social skills are taught (Lovaas, 1981). Music enables a child to become emotionally balanced through use of song and games, which can help relieve internal tension. Most children's piano method books have lyrics in the pieces

and by encouraging the singing of these lyrics during lessons a teacher would be able to aid in the development of communication. Autistic children are often non-verbal for many years and therefore have a limited ability to express themselves. Singing is often developed before speech and is therefore an easier means for autistic children to convey their thoughts and feelings.

The Advanced Stage described by Lovaas in ABA therapy focuses on Subtle Social Skills that help develop advanced cognitive and communication skills (Lovaas, 1988). By the time a child reaches the advanced level of therapy development they will have stronger social skills and a better understanding of Skinner's behavioral science principles: reinforcement, prompting, fading, reinforcement schedules, extinction, shaping, discrimination and differentiation (Myers, 2004). A child would now be able to relate to others emotionally and communicate their own feelings through their increased vocabulary skills. In piano lessons a teacher would also be able to communicate more effectively with a student and could develop interpretation, encouraging the child to communicate ideas through their playing. The stronger social skills would enable the child to begin to shape the music and to connect with the audience in performances.

After working through the stages of Applied Behavior Analysis the next step would be to break down lessons into small tasks for more effective teaching. Children with autism have strong aural skills and are excellent at imitating. A teacher could play a passage in the music and have the child imitate with a special focus on the hand position, finger movement and sound production. To communicate successfully with a student, the teacher would give commands such as "Do this" throughout the lesson so the child is able to realize they are expected to play the same way. If the child succeeds he or she would receive positive reinforcement, such as a sticker or praise. If the child fails the teacher can respond simply by saying "No", taking a short pause and then repeating the command, ensuring each attempt is separate. The teacher can assist the child by physically helping them move their fingers if the child responds incorrectly twice in a row. As more simple skills such as the proper way to move the fingers are mastered, more difficult tasks can be gradually added. In order for the child to get the most out of weekly lessons, the parent would also need to learn the basics of piano playing so they would be able to assist with the learning at home during daily practice sessions. Most likely the first few years of lessons would mainly involve teaching by imitation, ear training, rote-learning and would involve the parent. As the beginning level skills are developed, such as creating a good hand position, building strength in the fingers, proper articulation etc., the child would be able to work more independently as they grow older. The independence and success the child experiences at this point would help build their confidence.

Children with autism generally feel that the world is a mass of people, places and events that is very difficult for them to make sense of, therefore causing a great deal of

anxiety. While it is a daily struggle for them to understand and relate to other people, music can stimulate these children and help them develop meaningful communication while also keeping them emotionally balanced. Because music making in general involves many of the fundamental elements of social interaction, such as self awareness, sharing, turn-taking, listening and responding to another person, the study of music can be seen as an effective tool for autistic children, enabling them to better develop their fine motor, communication and social skills.

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