

Applied Behavior Analysis *What Is It?*

By Stacy Hultgren

Courtesy: PDD NETWORK newsletter

John McEachin, Ph.D., is a clinical psychologist with 20 years of experience servicing families with autism. He worked under Dr. Ivar Lovaas (the "father" of ABA) during his graduate training and now has a private practice devoted to children with autism. He lectures extensively, develops treatment programs, and trains parents and professionals.

If you see a video on Applied Behavior Analysis (ABA) principles, you may feel that it's not a new concept, and in a way, you'd be right. What Dr. Ivar Lovaas did in establishing the ABA program, was to take basic principals in behavior science, and emphasize the intensity that is needed for our particular kids. Dr. McEachin says that if 30 *minutes* two times a week of speech therapy is a good thing, imagine how much more can be done in 30 *hours*.

There are many "challenges to learning" encountered by children with autism. Below are some of the individual challenges and how ABA specifically addresses those issues. Again, remember that this is an extremely basic description, and if you would like further information about ABA there is a list of sources at the end of this article.

Low motivation – Reinforcers for our children tend to be on the idiosyncratic side, so the types of things used for other children in various behavior modification interventions probably will not work with these kids, at least at the beginning. You need to find what will work for this particular child to motivate his interest in completing a task. Every effort should be made to maximize the contrast between positive and negative consequences so that the concept of cause-and-effect can be learned.

Limited reinforcement repertoire – ABA principles recognize that social reinforcers (approval or disapproval) are usually not effective. Praise, in and of itself, is not enough at first, but can be paired with a more tangible reinforcer (such as grapes, a favorite toy, etc.). Eventually the tangible reward can be taken away and the continuing smiles and words of praise "come to be effective in their own right."

Short attention span – ABA breaks each task into very small, measurable steps.

Easily distracted – Teaching in a quiet environment by reducing auditory and visual distractions is important. Noise level, movement of others, windows, even air conditioners can be excessively distracting to autistic children. The goal is to begin in a very structured environment, but to move the child into more and more ordinary environments as they become more successful "so that the child becomes able to work in the presence of distracters."

Learn more slowly – Repetition is an important method for autistic children, but it should not be boring or tedious. "In fact," Dr. McEachin says, "that's our responsibility - to make sure it's NOT tedious". Some kids require literally hundreds of trials on order to learn a specific concept, but they also will learn it more effectively if it is practiced within a short time span. In other words, a skill that is practiced once a day is not as effective, and could take months longer to master, than one practiced twenty times a day. In order to

know when a child has really mastered a skill, it is rehearsed, and then the child is distracted with other tasks. Then, they go *back* to the first task and see "can they still do it?" It is not repetition for the sake of repetition; it is done in a manner to maximize learning.

Difficulty understanding abstract concepts – ABA therapists use concrete examples of concepts and begin with the simplest language that the child is able to understand. Then more complex language is added as the skills and concepts are learned. "We definitely want to get the children to the point where they can understand everyday language – natural language".

Poor learning by observation – These children have difficulty picking things up incidentally, so the need is to explicitly and systematically teach each skill or behavior. ABA stresses the skill of imitating people "because if they can imitate, they are able to learn a lot of skills that they would otherwise not," says Dr. McEachin.

Poor differentiation between relevant and irrelevant stimuli - These children often do not know the difference between the essential aspect of a situation and those aspects that are trivial. Focusing attention and presenting *only* stimulus that is considered essential is a way of circumventing this problem. It is important to watch out for erroneous associations. They may learn to tell boy dolls from girl dolls based on the shoes that they wear rather than the more obvious differences. These associations may not be reliable and "we have to teach them to zero in on the relevant aspects of the situation". Be careful with tools like flash cards, he says, because you could find out that the child is discriminating one from another based on a bent corner or smudge on the cards. He stressed the need for using different materials and in different ways to avoid their "making responses based on things that really are not an essential part of the concept."

Behaviors such as self-stimulation interfere with learning – "When they are stimming," Dr. McEachin tells us, "that's often where their attention is." If 90% of their attention is invested in their self-stim activity, there's only 10% left to focus on the task at hand, "so we have to work on suppressing those behaviors that interfere with learning."

Difficulty learning in large groups – Once the child is learning well in a one-to-one setting, they can begin moving to a 1:2 setting; 1:4; 1:8; etc. by gradually increasing the size of the environment as they are able to maintain attention and remain on task.

Does not occupy self appropriately during free time – ABA provides structure and teaches leisure skills. Dr. McEachin says to "build in play skills and other types of activities that they can do independently so that they're not going off into their autistic world."

Sensory/motor impairments – Sometimes their reactions can be over-responsive or under-responsive. Often the visual channel works better than the auditory for obtaining information. Dr. McEachin stresses that the children who are the most successful in ABA are children who are able to use the auditory channel successfully. Therapists attempt to balance playing to their strength by using the visual channel in teaching, with pushing the child to develop better use of their auditory system. For children who don't like touch, Dr. McEachin says, "we touch them." He believes they end up not only becoming able to tolerate it, but actually enjoying it.

Components of a discrete trial

Each skill is taught in very small and very brief units called "trials". Each trial consists of an instruction, a

prompt, an opportunity/response, and feedback. The instruction is given in very clear language that the child can understand, and, as the child becomes able to handle more complex language, it moves toward a more natural language base. They may begin with a direct stimulus "look at me" then move to a more natural stimulus such as just saying the child's name to get his attention.

Prompts are not always needed, but they will use "anything that will facilitate the desired response". These can be visual prompts such as a gesture or taking the child's hand and moving it through the desired motions (a physical prompt), but the aim is to reach a point where the child can do the desired task with no prompt at all. The response should be evident within about 5 seconds. If there is no response, or an incorrect response, the trial is considered to be over and a new one begins (although it may be the same task – in fact, many people would not be able to tell where one "trial" ends and the next begins. It is broken up this way so that data can be obtained on the progress of the child).

Feedback on each trial is given immediately. The more information that is provided to a child here, the faster the learning can take place. It is important, he says, not to praise every response; some will be terrific, some barely adequate, some not *quite* accurate and some simply unacceptable (such as throwing things). Use the feedback, Dr. McEachin says, to indicate where the response falls. ABA has a reputation for using strong aversives because that was the way the program was originally designed years ago, however, that has changed and they no longer use very strong negative feedback. He points out though, that "some people think that merely saying 'no' to a child constitutes an aversive. What *I* would say about that is, hearing the word 'no' is a very common, everyday event. It is part of the world, part of life, and if you're a person who cannot handle simply hearing the word 'no', you're going to have a really, really rough go of it. I think it's important for us to teach children to be able to handle the word 'no' simply at an informational level." That doesn't, he stresses, imply that screaming at children is OK, but firmness can be conveyed without disrupting the situation. There are times, he says, to be very supportive even though they have given the wrong answer. They worked hard, they are sitting appropriately, they are careful about their response, but it is incorrect. Clear information is conveyed in the words and the vocal inflection "Oh, no. Good try." If they are not attending, it's OK to say "No. You need to look."

The only way to tell if learning is actually taking place is if the child gives some kind of response "that he can only make if he, in fact, understands." Evaluation of the effectiveness of trials is a critical part of the therapy, he says. Data tells whether a student is making progress or not, and if not, "I conclude there's something wrong with what *I'm* doing, rather than '*this student doesn't learn very well*.'" He stated that behavior experts need data to demonstrate the cause-and-effect relationship between the intervention and the outcome, "we want to see measurable, observable changes."

The hallmark of the Applied Behavior Analysis program is the intensity with which it is delivered. It takes many, many hours a day, and is very directive and instructionally based. Dr. McEachin says that if a family is not comfortable with a directive-type program, they should find another program that would better suit their needs. He says, "our goal, our responsibility to children is to direct them because they are not able to direct themselves. And, in fact, I'll bet that there are many times a day when you are quite directive of your children." Brushing their teeth is a good example. "They would rather not do that. But I make a decision as a parent that I know, from a health standpoint, this is important and I'm going to insist that it be done."

A lot of people fault the ABA program because they believe that generalization does not occur, and if a child can't take information from one situation and use it in another then it's not really learning; it's just mimicking. But Dr. McEachin says that generalization is part of the ABA package "and if you (the therapist) understand that, and if you include that in part of the work that you do, you will get generalization." Strong parental involvement in the ABA program is stressed as a very large component of its success.

School programming

One of the difficulties about an ABA program is that "when you're going to school districts and proposing something a little different than what the school system is used to doing", there is a great deal of resistance. Sometimes working with young children in a home setting is viewed as "restrictive". But, says Dr. McEachin, "you have to understand that the approach here is based on, first of all, accelerating development that may be (delayed). We want to, as quickly as possible, give to children language, ability to follow instruction, paying attention, and behavior to learn." He states that "this can best be accomplished, or more rapidly be accomplished, working with children one-to-one." While the program can be center-based, rather than at home, home sometimes has it's advantages when working with very young children (3-4) since naptime and breaks can be incorporated into the program in this setting. He says that, "although the child may not be in a group setting of children, the fact is that the program definitely does promote development of social behavior." Having first established the underlying skills, they can then transition to a mainstream setting and "they'll be able to participate at a much higher level and participate much more meaningfully." Having already learned the basics, they can be much more acceptable right from the beginning of the school experience. He gives the example that, in order to teach soccer, you would typically put any child on the field with some other kids and have them play. They learn by watching and doing. OR he says, you can spend some time before going to the playing field teaching the basic skills of how to kick a ball, what the rules are, how to dribble, and *then* put him/her with other kids. "Which way will we end up with a better soccer player who has more fun?"

The time that a family invests into an Applied Behavior Analysis intervention for the child will depend on the family dynamics, but according to the research, the optimum amount of time is about 40 hours a week. People think that that is unrealistic when talking about a three-year-old, but that time includes naptime, mealtime, and a lot of playtime that can be used for breaks or rewards and be facilitated by someone who can *use* that time to the child's advantage. It is not, as people picture in their minds, a child sitting at a table responding to questions all day long. The children tend to be more connected to those around them, more tuned in to the world.

Families may believe that a program this intense would be very demanding and add a lot of stress to their lives. One must consider that a lot of families feel that the child's behavior alone adds a lot of stress to the family situation, and improving the behavior can actually reduce the stress. That is a decision that each family must make based upon it's own dynamics, abilities, and patience, and if you decide that you cannot manage 40 hours, but 25 would be possible, that's OK, too. There is no 'all or nothing' about the program (*Ed. note: in fact, if you make use of the basic principal of rewarding positive behavior and extinguishing negative behavior, it will have a positive effect for TYPICAL children as well*).

It has been rumored that ABA produces "robots" who are unable to think for themselves. But that

conclusion, says Dr. McEachin, is sometimes based upon the 'flat affect' that children with autism inherently have, and shouldn't be attributed to the intervention, but to the disorder itself. In fact, he says, ABA can improve the lack of emotion in the voice by teaching a greater range of emotional behavior. That you can "train spontaneous behavior sounds like an oxymoron," but Dr. McEachin says that spontaneity is something that occurs in the absence of obvious outward stimulus. Conversation skills can be taught by cueing, then transferring the cue to a stimulus that would occur naturally, and then they will be better able to do it on their own. As an example, during a conversation children are taught not just to say, "I don't like pizza." They are taught to follow it up with what they DO like "I like chicken." And *then* to follow *that* with a question "Do *YOU* like chicken?" This is what a conversation is all about, the give-and-take, and they have now learned a strategy to achieve that. They teach four components that can happen in a conversation – initiate a statement, initiate a question; respond to a statement, respond to a question. Learning must take place across different settings and by using different language if it is to be truly useful learning. Therapists don't just teach "touch your nose"; that language needs to be variable to include "where's your nose?", "can you find your nose" and "show me your nose", so that they learn to recognize that there are different ways to ask for the same thing.

If your child is no longer a preschooler, don't think that ABA can't work for you, says Dr. McEachin. There is a misconception that the theories only apply to young malleable minds. The studies that have been done in the past only involved young children, but that does *not* conclude that it doesn't work for older individuals, in fact, they have experienced substantial improvement for them as well. Different reinforcers are needed for older children and creativity is the key to success. For kids who are not capable academically, there needs to be a focus on self-help and independence skills – doing laundry, going to the grocery store. Reading is one academic skill that needs to take precedence since it is important for so many every day happenings. There needs to be a focus, he says, on parent concerns and long-term prognosis when planning programs for older children.

What is the possibility for getting ABA programming in a child's public school system? There are advantages to center or school-based programs, but there are some drawbacks, too, that might make home-based programs more desirable. Since the school is a large system, they have a great deal of resources that are not available to an individual. The availability of space and materials can sometimes be an advantage, of course, with today's overcrowded schools and small budgets these things are not necessarily always easy to come by. Peers for practicing socialization skills and access to adjunct therapies such as occupational therapy and speech/language therapy are a consideration, as well as the ability to serve a larger group of students than would be possible in the home. It not only is easier and most cost-effective for a therapist to go to one location rather than several in a day, it makes the transitioning to mainstream classes easier for the children if they can remain in the same space. Of course, there are obstacles that are inherent in the fact that the school *is* a system. There is a culture within the system, and that means learning to work within the structure that exists. Money is certainly a major issue, and so are the hiring policies. There are unions and seniority issues to consider – sometimes the person best suited for the job is not available, or someone else is required to fill the position due to hiring hierarchies. In a home-based program where all of the control is in the parent's hands, you can choose whomever you feel would be the best individual and be in control of building the program from the ground up. When a school is responsible

for the program, you depend greatly on the decisions made by others. It is a choice that needs to be made very carefully.