WHAT IS ABA?

(includes information primarily from Kathleen de los Reyes with additional information from VIA's Shaping the Future training, and coursework taken with Carol Schall)

ABA stands for "Applied Behavioral Analysis." ABA is the scientific field devoted to understanding and changing human behavior. It is based on scientific knowledge through sound research and is applied for the benefit of the child or adult.

There are many misconceptions about ABA that are rooted in its early application. One misconception is that sometimes ABA is associated with the use of aversives, or punishment, because these were used in the past with ABA. The professional board which certifies behavior analysts has a code of ethics which emphasizes positive behavioral interventions and so aversives are no longer used. Aversive methods are not ethical. The area of positive behavioral supports has been studied and researched in ABA and is part of the philosophy of working with children.

The other part of ABA that is well-known and often misunderstood is discrete trial teaching (DTT) where skills are taught using a systematic procedure that breaks them down to small components. An example of DTT is a teacher and a child sitting at a table and the teacher is giving the child an instruction, like "touch the ball," and then providing a reinforcement when the child touches the ball. Each trial is "discrete," as it has a specific beginning and end. Many people think that discrete trial is the same thing as ABA when, in fact, DTT is only one of the tools or methods that fall under the ABA umbrella. ABA is a broad umbrella that includes DTT and Applied Verbal Behavior and also more naturalistic approaches, such as Incidental Teaching, Pivotal Response Treatment (PRT), and PECS (Picture Exchange Communication System) (all are defined later in this handout). Saying you want "ABA" for a child does not say what kind of intervention you want.

One of the basic concepts in ABA is that behaviors are learned so behaviors can also be unlearned or changed by teaching another behavior. How behaviors are defined is a critical part of ABA because, before we can do anything with a behavior, we have to know exactly what it is. Behaviors must be observable and measurable. Behaviors are described in ABA so that any person walking in a room would know exactly what they were looking for. For example, using the word "aggression" to describe a behavior is too general. It needs to be defined more explicitly, as in biting, hitting or head butting. ABA only focuses on behaviors that can be seen or observed (so ABA does not address what cannot be seen, such as thoughts, feelings, attitudes and emotions). ABA does recognize that some physiological or physical conditions, like hunger, illness or noise, may affect a behavior.

ABA teaches that all behavior serves a function – a child may behave in a certain way to 1) get attention 2) escape or avoid a situation/attention 3) get what s/he wants and/or 4) get sensory feedback (the behavior feels good). Sometimes it is easy to figure out the function and other times it is very difficult.

ABA breaks down behavior down into the "ABC" model. The **A** stands for antecedent or what occurred just prior to the behavior. The **B** stands for the behavior which occurs. The **C** stands for consequence or what happens immediately after the behavior.

So, for example, the A (or antecedent) might be a mom telling her child "get your shoes." The child getting her shoes would be the B (or behavior). The C (or consequence) might be the mom saying "thanks for getting your shoes. Now we can go outside!"

Another critical requirement for ABA is data collection. By collecting data on the ABC (antecedent/behavior/consequence) over time, we can track and analyze patterns that occur and thus be able to teach a skill better or otherwise intervene to make changes in behavior.

For example, the ABC data can help to predict when a behavior is likely to occur again. When we take data on when a behavior occurs, we often can see a pattern. We may begin to realize that we can expect this behavior every day at the same time. Then, by looking at the events that occur before and after the behavior, we can design interventions to address those events to either increase or decrease a behavior.

For example, if a child begins to begins to throw things and hit other people everyday before his bath, we might look at the events that occur before the bath (did we communicate in a way that he can understand that he would be taking a bath soon or did we just pick him up in the middle of his playtime and bring him to the bathroom without any warning?) and we might look at the bath itself (is there something about taking a bath that he does not like that we can change?) and then we might look at what happens after the bath (does he go immediately to bed? could going to bed be the problem?).

Data drives decision making. It is needed prior to an intervention as a baseline. The baseline is how often a child is doing something before we try to make any changes in behavior. So, if a parent says that she wants her child to sit and play with her longer, we would first want to know how long the child will play with her right now, so we would ask her to keep track of that for a few days.

Then data is collected during intervention to help determine if a treatment is successful or needs modification or if we need a new approach. So, if we put a plan in place to increase the amount of time the child was playing with his mom, we would keep track of how long he stayed with her during intervention (we might have a intervention plan in place that includes teaching the mom to follow her child's lead in play and also how to expand play. We might have the mom give praise and perhaps another reinforcer to help the child stay engaged for longer periods of time). While we could take data each time they play together, we don't have to. We might decide to do a sampling, like once a day, or take data on each time they play together but only do that 2 or 3 days of the week. The criteria for knowing we have met our goal are always set forth at the start of the intervention using goals that are observable and measurable. So, in this example, our goal may be that we want the child and his mom to play together for ten minutes and to be able to do this for 3 out of 4 times that we take data. Once a child can do this (and our data will show us he can), the goal is met. Data is an essential part of ABA and all good teaching.

ABA is NOT

1. Discrete Trial Teaching
2. a quick fix
3. a cure for children with autism
4. experimental (there is info about its effectiveness)
5. a program that utilizes aversive forms of punishment
6. a program that turns children into robots
7. isolating (in terms of 1:1 instruction)
8. too demanding for small children
9. the teaching of splinter skills
10. only beneficial to children with emerging/beginning skills who cannot learn any other way

PROBLEMS OF LEARNING FOR CHILDREN WITH AUTISM

(and many other children!)

AND HOW ABA ADDRESSES THEM:

1. Low motivation – ABA uses immediate reinforcers to teach a behavior. Reinforcers help to motivate a child to do the desired behavior again.
2. Limited reinforcement repertoire – it can be challenging to find reinforcers for children with autism, and "secondary" reinforcers, such has praise, are often not effective at first. To help to make praise reinforcing, ABA may first use "primary" reinforcers (candy, juice) paired with a secondary reinforcer and then fade the primary reinforcer when more response is seen to the secondary. (Items and activities that are secondary reinforcers start off as neutral for all of us. Examples are praise and money. We have to be taught that these are reinforcing. Primary reinforcers, such as food and water and warmth, do not have to be taught to us – we know from birth these things are reinforcing).
3. Short attention span – many children do not have the attention span for long tasks. ABA breaks each task into small measurable steps. One step may be taught at a time.
4. Easily distracted – ABA starts with a structured environment (may define the space using a table and chair, a rug, etc.) but moves the child slowly into a more ordinary environment and routine.
5. Learn more slowly – ABA focuses on repetition. A child practicing a skill just once a day takes a lot longer to learn that skill than if he/she practiced 20 times per day. ABA recommends practicing the skill, then doing another kind of activity, and then going back to that skill to see if the child has learned it.
6. Difficulty understanding abstract concepts – ABA uses concrete examples of concepts (visuals). It starts with actual objects and then moves to pictures and it begins with the simplest language a child can understand, a one word label for an object. Then more complex language is added as skills and concepts are learned.
7. Poor learning by observation – Children with autism typically do not pick up incidentally (this means that they can have trouble learning without specific instruction); ABA explicitly and systematically teaches skills and behavior.
8. Poor differentiation between relevant and irrelevant stimuli – ABA focuses attention on stimuli that is considered essential. For example, when learning to tell the difference between a boy doll and a girl doll, a child may make the distinction based on their shoes rather than more relevant features. When the shoes are removed, the child can't tell the difference.
9. Behaviors, such as self-stimulation, that interfere with learning – ABA, with its structure, helps to focus on the task only.
10. Difficulty learning in large groups – ABA generally starts with 1:1 and then, when a child is ready, moves 1:2 etc.
11. Does not occupy self appropriately during free time – ABA provides structure and teaches leisure skills and builds in play skills so the child can be part of group.
12. Sensory-motor impairments (over- or under-responsive in sensory and motor areas) - ABA uses visual strategies which often work better than auditory for children with autism.

PHILOSOPHIES – Accommodation versus Assimilation

Accommodation – change the environment to fit the idiosyncratic (individual) needs for each individual. For example, if a child attended better at circle time if given something to hold in his/her hand, the child would be allowed to have something to hold.

Assimilation – help children adapt to current or future physical and social environments. For example, if a child was having trouble attending at circle time and could not have something to hold (perhaps this meant everyone in the group wanted something to hold and the teacher did not feel

this was acceptable), a strategy would be put in place to teach the child to attend to the teacher during circle, perhaps by first using prompting and reinforcers and then fading those out.

Many times we start out with an accommodation, having a plan to move in a systematic manner to assimilation. The goal is to help children be part of their family life and their peer group in a natural setting. By moving in small steps that are planned in advance, evaluated through the data for success/modification, the child will remain successful and thus motivated to continue to grow and learn.

ABA INTERVENTION STRATEGIES

These strategies are based on the ABC model and address the learning needs of children with autism cited above. You need to know strengths and weaknesses of the child as well as collect data to assess which intervention is most applicable. The interventions are based on positive behavioral supports. They address the antecedent and/or the consequence in order to change the child's behavior.

PIVOTAL RESPONSE TEACHING (PRT)

PRT is a comprehensive system using a developmental approach, child-directed activities, and applied behavior analysis procedures to teach pivotal behaviors within the child's natural setting. Pivotal behaviors underlie the core deficits in children with ASD; children with ASD have difficulty with social and communication skills and have a restricted and repetitive repertoire of behavior (these are the core deficits). When you focus on pivotal areas, everything else starts to improve. These pivotal areas have been identified as motivation, response to multiple cues, self-management, self-initiations and empathy. Focusing on these pivotal areas leads to changes in other areas of function and responding without direct teaching. Teaching first words is an example of using motivation as a pivotal behavior in helping children learn to talk. With PRT, we wait for a child to show us what s/he wants and then use that motivation to teach the child to say what he wants in order to receive it. It uses many ABA principles like child preference in play materials and reinforcers, reinforcer delivery contingent on response attempts, reinforcer delivery is immediate and appropriate, child needs to be attending and interspersing hard/easy tasks.

INCIDENTAL TEACHING

Incidental Teaching appears "incidental" but is actually highly structured and planned. Incidental Teaching is child-initiated but the adult often will manipulate the environment ahead of time to attract the child's attention and to elicit the desired behavior. For instance, if the child loves pudding, you can put a spoon in sight but out of reach so they have to ask for it. Certain toys, left in view but in out of reach places, will require a request to get it. During play, imitation skills with toys can be taught when you set up the environment with the child's favorite toys and then follow the child's lead and help him/her follow yours with the simple direction, "do this." If a child enjoys music, it can also lend itself to incidental teaching for imitation, fill-ins for words, joint attention when you plays favorite songs for the child. Favorite finger plays can encourage imitation. Filling in parts of songs can be a fun activity. Sing "Old MacDonald" and leave out the last "o" for the child to fill in. Dancing to music, like the freeze, can teach "stop" and "go."

APPLIED VERBAL BEHAVIOR

This method uses repetition and the use of rewards to reinforce the desired behavior. Verbal Behavior focuses on the functional units of language and helps children learn to imitate, request, label and engage in conversation. This strategy generally uses sign language to develop the verbal skills.

TASK ANALYSIS

Task analysis breaks down a task into the component steps so teaching can proceed step by step. This is for more complex tasks or skills that are part of a sequence of actions. First, the task has to be broken down into manageable steps. Then a decision has to be made to either forward chain or backward chain the behavior. Forward chaining is teaching the 1st step to the child and then finishing as they watch or are prompted through the task. When the 1st step is mastered, the 2nd one is added as an independent attempt. Backward chaining is working through the task with the child observing or prompted and leaving the very last step for them to do. Once the child can do the last step, the next to last step is taught for independent function. Backward chaining allows a child to feel successful as the task is done once they do their step. An example is teaching dressing. The child is helped to put on their pants but the final pull up is the step they would do. If they do it independently, they are reinforced immediately. If they need help, the prompt is faded as quickly as possible.

PROMPTING AND FADING

A prompt helps the child perform the correct skill or behavior. Fading is the systematic withdrawal of prompts until correct independent function has been reached. There are many types of prompts:

1. physical – touching the child including hand over hand (full) through the whole or part of the behavior to touching an elbow to start a response (partial).
2. modeling – physically demonstrating the correct response. A physical model is doing the action when the child is attending – so, if we want the child to put a puzzle piece in, we show him how to do it.
3. gesture – using gestures (pointing, orienting or signaling in some way) to get a response
4. positional - placing desired response object closer, using body to block distracting items from view or making sure the child moves to follow the direction correctly as in “go to the sink” and move so they have to head that way.
5. verbal (full and partial) – a full verbal prompt is giving the entire response (“juice) and a partial verbal prompt is giving just the beginning sound (“j”).
6. voice inflection – using your voice in a way to give a hint to the child which response would be correct
7. visual - presenting a picture, object or picture symbols to help child respond

We want to use the least intrusive prompt necessary for the child to do the desired skill. For new skills, the child may need more intrusive prompting, such as physical prompts. For a skill that is already acquired, a child may need just a word or a gesture to get him or her to perform the skill. The other individuals working with the child should all be aware of prompt levels being used so there is consistency in teaching. Prompts need to faded as soon as possible as children may become prompt-dependent. Fading makes sure that a child will not become dependent on adults. Children who are dependent on others to perform are demonstrating “learned helplessness” (learned helplessness means a child feels s/he cannot affect change – s/he doesn’t see how he can be autonomous. A characteristic a child with autism often has is the inability to see how the environment can be impacted by his behavior so there are repeated failures.) Giving more reinforcement as the prompts are faded motivates the child to give appropriate responses.

PAIRING

Pairing is when the adult makes her/himself a reinforcer by associating her/himself with preferred items and activities. In pairing her/himself with reinforcing items and activities, the adult is set up as a reinforcer and becomes someone the child wants to be with. For example, if a child really likes the reinforcer of being gently tossed on the bed and the father is the one who does this activity, the child will want to be with his/her dad more because he does the preferred activity of gently throwing on the bed.

SHAPING

Shaping is developing a new behavior or skill by reinforcing closer and closer attempts. This is used in the pivotal response teaching strategy of teaching first words by reinforcing any sound (except a cry or a whine) to start and gradually moving to expecting and reinforcing only the better sound production that is closer to the target word. The steps before beginning the shaping process are identifying the final behavior and the starting behavior and the steps in between to go from start to finish. It is important the team involved in working on the skill know the behavior to reinforce (any sound? closer approximation?) so that they don't move backwards or go too far ahead.

DISCRETE TRIAL TEACHING (DTT)

Discrete trial teaching breaks skills into the smallest steps and teaches them using behavioral principles. It involves giving a direction in a simple, straightforward manner so a child can understand it. It should be given when the child is attending. The direction is the antecedent. The response of the child is the behavior; it can be no response, a correct response or an incorrect response. The target behavior must be identified in observable, measurable ways. Depending on the response, the consequence is immediately delivered. The consequence can involve reinforcement, errorless learning (prompt so the child produces the desired behavior) or response from the adult to try again when the response is incorrect. Understanding discrete trial teaching can help to extend the procedure to natural environments. The basic principles of DTT – making sure child is attending, giving a direction that is understandable and to the child's level of understanding, and delivering an immediate, appropriate response can be applied in any teaching situation.

REINFORCEMENT

Reinforcement is any event following a behavior that strengthens the behavior or increases the likelihood that the behavior will occur again in the same or similar circumstances. If behavior does not increase, you have not provided a reinforcer. A reinforcer is anything a child wants, including objects, activities, attention, and/or avoidance of tasks. What makes something a reinforcer is that the behavior was strengthened, NOT that the child liked what s/he got! In other words, a reinforcer is only a reinforcer if you see the child do the desired behavior more. Reinforcement for correct responses needs to be immediate and based on the correct performance of a skill. Children can be given a choice in what reinforcer they want to work for to motivate them to participate. It is important to continually assess what items/activities a child likes. The child may tire of a reinforcer if it is used over and over. Watching which items/activities a child naturally moves to as well as presenting novel items will keep a reinforcer list that has options to avoid tiring of one or two items.

CHOICE

Choice is part of incidental teaching, task analysis, reinforcement. Giving a child a choice gives them some control. It will give them motivation if they are part of the decision. This can range from what toy to play with, what snack to choose, or what clothes to wear. Choices allow for presentation of multiple cues – big apple or little apple for snack? The types of choices a child can have are within the task, what partner to play with, first/then (first you do "X" and then you get to do "Y"), and refusal. Part of choice is teaching "no." Children can have choice of refusal and so can the adult. It is good to teach "no" or "not a choice" so children learn that at times this will happen.

VISUAL SCHEDULES

Most adults use visual strategies to get them through their day (calendars, planners, etc.). Children benefit just like adults do when they can have visual supports to help them move through their routine, especially through transitions. Transitions and change can be difficult. A visual schedule can be used for routines at home, like meals, bath or bedtime. Use actual items, pictures or picture symbols, depending on the understanding of the child. ~~It~~ A schedule gives the child a sense of time and "what comes next." It provides structure to the day. Use the Premack Principle (non-preferred activity followed by preferred activity) to motivate the child through harder parts of the schedule. This strategy builds in flexibility because the schedule can be changed and the child can be shown

ahead of time so s/he can anticipate the change. The schedule can use a special symbol, like a star, for new or rarely done events. The schedule teaches independence. ACTIVITY BOOKS are part of scheduling. These are books that set up use of leisure time by having pictures of toys the child likes and can do in a set order. The child works through the pictures doing the first activity and then, when completed, moves on to the next one. They can choose the final activity from a menu of reinforcers. These skills need to be taught using a variety of ABA methods. PICTURE CARDS can be used as part of the scheduling and also used to teach communication (the Picture Exchange Communication System by Bondy and Frost is the most well-known strategy).

SOCIAL STORIES

This is used to convey information about social tasks or behaviors. You can use illustrations or pictures to assist in comprehension. Multiple versions can help to generalize the skill. Social stories can address fears and challenging behavior. Comprehension assessment is needed prior to using social stories; often young children are not ready developmentally to benefit from social stories.

PRIMING

Priming is going over a task, situation or activity before it occurs to prepare the child. It helps the child to rehearse the activity so that they can attend and or participate better. An example of priming is, prior to story time at preschool, selecting the story that will be read at story time and reading it with the child ahead of time so he/she will be familiar with it when it is read at school. Priming can also help to address scary situations by making them familiar with what will be happening. A story about going to the doctor's, letting them play with a toy medical kit, and demonstrating use of tools on siblings or peers may help them be less anxious when they visit the doctor.

ROLE PLAYING

This can be done with dolls/puppets or people. It may involve child as observer or participant. Role playing rehearses activities and social skills.

TOKEN ECONOMIES

You can use star chart or token board to focus on a behavior or skill. It involves delaying reinforcement by the earning of the tokens or stars and, once a certain number have been earned for performing the desired behavior, the child receives a larger reinforcer. Start with an acquired skill and 1 token for reinforcement and then build the number of tokens. Once the child gets the system, you can use it for newer skills. So, for example, you might start by giving the child a token or star each time he sits through a meal with his family. This is a skill the child already knows how to do. Once he understands the system, then you might begin teaching a new skill, like taking dishes to the sink. Each time he does this, he would get a token or a star. Once he had a certain number of tokens or stars on his chart, he would get another reinforcer. The tokens or stars are immediately reinforcing and the reinforcer given after the token/star chart is complete would be delayed. Some young children cannot understand a delayed reinforcer so this strategy would not be good to use for them. Use positive terms when giving the tokens for appropriate behavior (using words, quiet hands, followed directions, good looking). Choice can be used here, giving the child a choice of two or more possible reinforcers for completion of token board/star chart. Tokens can also be used for sequences to give positive visual reinforcement as a child moves through a sequence. For instance, if a child resists dressing, a dressing picture schedule can be made and as each item of clothing is put on (with help or independent depending on the child), a token is given. The actual process depends on the child's skill level and behaviors involved.

TIMERS

Timers may help a child know that an activity will be coming to an end. For some children this is very helpful. Other children focus in on the amount of time that is passing and may show anxiety. Assess the child's reaction to using timers. There are visual timers with red indicators that disappear as time goes by and there are kitchen timers and digital timers. Timers can also be used to indicate

a transition time in the schedule. When the beeper goes off, the child is expected to move to the next activity on the schedule. Or the sound can be used as a signal that an activity is done. The use of timers will need to be taught.

FUNCTIONAL BEHAVIOR ANALYSIS

What is the child communicating through the challenging behavior? This is critical to assess through a Functional Behavior Analysis. The response to a challenging behavior is based upon the communicative function of the behavior. There are 5 classes for the communication function: attention, tangible, escape demands, escape attention, and self-stimulatory. A functional behavior analysis involves a detailed assessment piece with data collection and questionnaires. It assesses the environment as well. After assessment, data is reviewed to determine the most likely communication intent of the challenging behavior. Then a replacement behavior is decided upon because we never eliminate a negative behavior without teaching a positive behavior to take its place. If we simply eliminate a negative behavior, it is very likely another negative behavior will show up to take its place. The replacement behavior must be taught to the child. A team approach is necessary for good assessment and implementation.

TEAM APPROACH

Collaborative teamwork is essential for ABA to be successful. Information on prompt levels, fading and shaping needs to be shared. Moving backwards or too slowly can make a child more dependent and moving too far ahead may make them stop trying as the task has become too hard. It is best to have written directions on teaching strategies and review them with a demonstration so that everyone understands them. It is also important to listen to the parents regarding their ability to carry through on some of the interventions. If parents are uncomfortable with anything, the team should modify or change plans. Since parents are the team members who will likely spend the most time with their child, they need to feel like they can do the intervention. We want to approach teaching in a positive way and not make anyone feel like a failure.

DATA

Data collection is essential. Simple data sheets can be set up so that it can be collected at agreed upon times or days. The data should be available for all the team members as it helps them to know what has been happening.