

Applied Behaviour Analysis

Principles of ABA

- Individual program - Each student must have a program that matches his/her strengths and needs.
- Task analysis – Analyze skill or task that needs to be taught, then break it down into small components or steps that it would take to do the task.
- Discrete trial and prompting – Teach each step separately.
- Reinforcement – Plan to reinforce each step with something that is highly motivating for the student.
- Repetition and prompt fading – Practice each step repeatedly until the student can carry out that component of the skill with no prompting.
- Skill development – Build each step systematically until the whole task can be completed independently by the student.
- Data collection – Frequently collect data in order to monitor the student's acquisition of the skill and the effectiveness of the program.
- Generalization – Teach the student to complete the task in different settings, with different people and at different times.
- Developmental skill building – Build skills developmentally in order to build a strong foundation that will serve to inspire self initiated life long learning.

ABA tells HOW to teach, not WHAT to teach

Program Policy Memorandum 140

The components of this policy consist of five parts:

A. Individual Programming

- i. Curriculum
- ii. Teaching Methods

B. Positive Reinforcement

C. Data Collection and Analysis

D. Generalization of Skills

E. Transition Planning

A. Individual Programming

i. Curriculum

Students with an ASD diagnosis would likely have needs in the following areas:

- communication
- language development
- independent functioning
- leisure and play skills
- difficult behaviours
- social interaction and emotional development
- life skills

These areas of needs will become the modified program areas as found in the student IEP.

ii. Teaching Methods/ABA Methods

- task analysis
- discrete trial training
- pivotal response training
- prompting
- fading
- shaping and chaining
- modelling
- video instruction
- social scripting/script fading
- incidental teaching
- priming
- structured peer-play interaction

These teaching methods become the teaching strategies on the modification pages of the IEP.

B. Reinforcement

Reinforcement in ABA involves far more than just handing out a reward once in a while in order to motivate a child. It is a systematic consequence that is used to increase the frequency of a desirable behaviour. For the purposes of delivering ABA methods, reinforcement needs to be linked directly to what the student values and it must be planned and closely monitored.

1. First decide what behaviour you want to increase.
2. Second, select the most potent reinforcers that will change this behaviour.
3. Make reinforcement immediate and certain if the behaviour occurs. The more closely a reinforcer follows a behaviour, the more likely it will be effective in increasing that behaviour.
4. Collect data on the behaviour before, during and after an intervention or teaching strategy is put in place to monitor the student's progress.

C. Data Collection and Analysis

Collection of data is a critical component of ABA implementation. By recording what we observe about a specific skill or behaviour, we can decide what needs to be taught and what goals should be set.

ABA data collection tools may be more useful than common assessment methods. In collecting data we can measure :

- Anecdotal notes record materials used, what worked and did not and how the student progressed
- Frequency that a skill is demonstrated can be recorded
- Frequency/Rate, how many correct in a specific time
- Correct/incorrect response
- Duration of time that a skill is demonstrated
- Prompt level is critical to data collection. Since independence for any skill is a goal, it is necessary to measure how much prompting is being used in skill development.

When data is collected:

Before teaching: To establish a baseline of skill development

During teaching: To probe the effectiveness of teaching strategies and materials and the progress of skill acquisition

After teaching: To assess the acquisition of skills/concepts and the maintenance of the skill. Can the student demonstrate the skill months after it has been taught.

Various methods can be used to collect data as well as record data.

What to do with recorded Data:

- A. Troubleshooting: What to do if progress is not happening or is very slow.
- Look for patterns in various aspects of programming and the school environment
 - Start making systematic changes
- B. Use the data to help make decisions about what skills to work on next.

D. Generalization

Generalization does not occur naturally with students with autism. Educators need to change the materials so that the student develops a broader concept of what is being taught. The general rule is that for a skill to be generalized it must be demonstrated or performed in at least three different settings, with three different people, at 3 different times using a variety of teaching materials. When the student can demonstrate the skill 90% of the time, the skill is considered mastered and generalized. The student has taken a step toward independence.

Eg.

<u>Skill</u>	<u>Settings</u>	<u>Time</u>	<u>People</u>
Following directions	Follow step by step instructions (preferably in visual form) <ol style="list-style-type: none">1. In the gym2. In the cafeteria3. In the classroom4. In the lab5. On the school yard	Following step by step instructions (and increasing the number of steps in small increments) needs to be practiced at many times during the day.	Parents, teachers, coaches, educational assistants, support staff, custodians, secretaries, bus drivers etc.

E. Plan for Transitions

An effective plan to support transitions should consist of identifying a student's transition challenges, setting clear goals and teaching strategies to address these challenges.

- Transitions into the school setting
- Transitions between grade levels
- Transitions between activities and settings
- Transitions from Secondary School to Adult Life
- Life Transitions in General

It is critical to use ABA methods for teaching a student how to manage transitions:

1. Decide on a target goal (eg. Use locker and move to class independently_
2. Use prompts to teach the transition skill
3. Model the expected behaviours and use visual schedules to teach the steps required
4. Fade the prompts if the student is acquiring the skill
5. If not, use a video model
6. If the student is still not achieving break the skill down into component steps and teach each step one at a time using forward chaining or backward chaining.
7. Reinforce each success so that it worth the student's while to follow directions.
8. Record data so the student's progress is documented
9. The skill still needs to be generalized

Completing the IEP

Learning Expectations

ABA must be applied when developing goals and objectives and setting up the program and assessment for the student. The following must be included when developing ABA specific learning objectives:

- Choose one skill at a time
- The level of support that is going to be provided (prompt levels)
- Written to reflect the incremental steps towards independent functioning of the skill
- Context and setting the skill will be learned in
- Criteria that will be used to measure success
- Expectation for generalization of the skill
- Time frame, remembering that a skill may take more than one term or semester

Teaching Strategies

Strategies that will be employed to teach the skill

- discrete trial training
- pivotal response training
- prompting
- fading
- shaping and chaining
- modelling
- video instruction
- social scripting/script fading
- incidental teaching
- priming
- structured peer-play interaction
- generalization
- data collection
- reinforcement
- functional behaviour assessment
- incidental teaching
- task analysis
- forward chaining/backward chaining

Assessment Methods

Assessment methods should match the teaching strategy and the individual students learning style.

- data collection and graphing
- checklists
- benchmarks
- running records
- rubrics
- video recording
- anecdotal records

Example of an IEP

Modified curriculum area: Language

Term 1

Annual Program Goal: Writing- Student will independently write sentences to share the events of his/her day.

Learning Expectations	Teaching Strategies	Assessment
Given a 5 word sentence with the last word blank, given verbal prompts, the student will complete the sentence by choosing the word that describes an activity that was completed that day. The student will choose the correct word 4 out of 5 times. Given the same 5 words sentences with the last two words missing and given verbal prompts, the student will complete by choosing the last two words of the sentence. The student will choose the correct words 4 out of 5 times.	Backward chaining Positive Reinforcement Repetition Prompt fading	Data Collection - correct/incorrect response

Given the same 5 words sentences with the last three words missing and given verbal prompts, the student will complete by choosing the last three words of the sentence. The student will choose the correct words 4 out of 5 times.

Given the same 5 words sentences with the last four words missing and given verbal prompts, the student will complete by choosing the last four words of the sentence. The student will choose the correct words 4 out of 5 times.

Given the same 5 words randomly, the student will independently complete the sentence correctly 4 out of 5 times.

Given the same 5 words Randomly, the student will independently complete the sentence 4 out of 5 times in 3 different settings under the direction of 3 different people.

Generalization