

*One Step at a Time:*

*ABA and Autism  
in the Classroom*



## PART A

### WHAT DO WE KNOW ABOUT AUTISM SPECTRUM

DISORDER?----- 7

The Spectrum

Teaching a Student with Autism----- 8

Kieran's Story

What is Applied Behaviour Analysis (ABA)? ----- 14

ABA in the Past

The Principles of ABA

What it is Not

Who does ABA Serve?

Why Use an ABA Approach in the Classroom?

ABA in the Early Years: Building a Foundation for Learning

ABA and the Home – School Connection

Program Policy Memorandum 140 in Ontario, Canada

## PART B

### APPLIED BEHAVIOUR ANALYSIS: A CLOSER LOOK

A. Individual Programming ----- 24

1. Curriculum

2. Teaching Methods

Task Analysis

Discrete-Trial Training

Pivotal Response Training

Prompting

Fading

Shaping

Forward Chaining/Backward Chaining

Modeling

Video Instruction

Social Scripting/Script Fading

Incidental Teaching

Priming

Structured peer-play Interactions

<b><u>B. Positive Reinforcement</u></b> .....	44
In Search of the Most Valuable Currency	
Positive Reinforcement	
Negative Reinforcement	
Punishment	
What do I use for Reinforcement?	
Secondary Reinforcement	
What do I do With all of These Googles?	
Reinforcement Systems	
<b><u>C. Data Collection and Analysis</u></b> .....	54
What is the Point?	
You Want ME to Collect Data?	
How do I Collect Data?	
When Should Data be Collected?	
<b><u>D. Generalization of Skills</u></b> .....	72
<b><u>E. Transition Planning</u></b> .....	76

## PART C

### **THE LEARNING IMPLICATIONS OF AUTISM**

<b><u>Social Impairments</u></b> .....	83
1. Motivational Differences	
2. Differences in Imitation	
Teaching Social Understanding	
<b><u>Communication Impairments</u></b> .....	92
Teaching Communication Skills	
Teaching Non Verbal Language	
Teaching with Pictures	
Living with Pictures	
Back to School	
I See What you Mean	
Why use a Visual Schedule?	
How do I Make a Visual Schedule?	
How do I Use a Visual Schedule?	
Are you Speaking to ME?	

**Stereotypical Behaviour and Repetitiveness -----106**

**What Impact does Repetitive Behaviour Have in the Classroom?  
There is Something That I Want to Tell You  
Sensory Nonsense  
More Physical Activity Please  
Overly Anxious**

**PART D**

**Individual Education Plans “ABA Style” -----119**

**Components of an Individual Education Plan  
Creating an Individual Education Plan “ABA Style”  
Gathering Information  
Strengths and Needs  
Current Level of Performance  
Accommodations  
Modifications  
Alternative Programs or Courses  
Annual Goals: The Big Picture  
Specific Learning Expectations  
Teaching Strategies  
Assessment Methods**

**ABA in High School? -----126**

**Bringing IBI into the School: Making it Work-----128**

**Reaching the Peak: Independence-----130**

**Appendices**

**Appendix A: Sample IEPs Written in “ABA Style”-----132  
Appendix B: Sample IEPs Written in “ABA Style”-----133  
Appendix C: Sample IEPs Written in “ABA Style”----- 134  
Appendix D: Sample IEPs Written in “ABA Style”-----135  
Appendix E: Using Task Analysis to Teach Skills Sample) -----136  
Appendix F: Sample Baseline Data with Task Analysis-----137  
Appendix G: Motivational Assessment Chart -----138**



## **What Do We Know about Autism Spectrum Disorder?**

- ✓ It is a life- long neurobiological disorder that has a tremendous impact on development of communication, language, social relations, sensory processing and cognition in the individuals that it effects
- ✓ 1 in 91 births will result in an Autism Spectrum Disorder (ASD) diagnosis
- ✓ More boys than girls receive a diagnosis
- ✓ ASD occurs in all races and socio economic groups
- ✓ There are variation in symptoms and variations within an individual over time
- ✓ A spectrum of disorders comprises the ASD designation

### **The Spectrum**

Childhood Disintegrative Disorder (CDD): This category describes those individuals (usually boys) who appear to be developing normally in the early months following birth and then after the first year or two, skills and abilities begin to recede and the child's development declines.

Rett's Disorder: This category describes those individuals (usually girls) who appear to be developing normally in the early months following birth and then after the first year or two skills and abilities begin to recede and the child's development declines.

Autism Disorder: This category describes those individuals who suffer from severe impairments in communication, social relations, and stereotypical and repetitive behaviour.

Pervasive Developmental Disorder – Not Otherwise Specified (PDD- NOS) also known as Atypical Autism: This category describes those individuals who have many but not all of the features consistent with autism. It may be used before an absolute autism diagnosis is made or for those who once had a classic autism diagnosis and the symptoms are not apparent any longer.

Asperger's Syndrome: This category describes those individuals who share many of the same impairments with individuals with autism. The communication impairments may not be delayed as they are in autism however, language



**It is misleading to assume that this range of disorders reflects a range of intensity. The severity of symptoms in each separate diagnosis can be intensely debilitating. Symptoms change over time as does the individual who lives with them.**



## **Teaching a Student with Autism**

Teaching a student with autism is a professional challenge and an opportunity to grow as an educator. These children will relate to others in a different way, perceive their environment differently, communicate with greater difficulty or not at all, and each child with autism has a unique learning style with an original ability/disability profile. There is no neat and concise, pre-packaged program that educators can pull off of a shelf when they are called upon to educate a child with autism. To make matters even more daunting, acronyms such as ABA, IBI, and DTT start flying around and teachers feel overwhelmed and under-trained to deal with the challenges of educating a student with autism in a classroom of students, some of which have very demanding learning needs.

Around the globe the incidence of autism diagnoses is soaring, parents are begging for schools to meet their children's needs and school boards are desperately seeking ways to do just that! The stakes are high during these times; our children need more: more differentiated instruction, more varied teaching strategies and more trained staff that are able to address the particular autistic learning styles. Our professionals need more as well: more training, more support and more time.

There are countless therapies, programs, diets, medications and interventions that all claim to help children with autism. Some even prey upon the desperation of parents and claim to cure the child. It is my belief that while many things can help a person with autism, education plays a key role in retraining the brain and establishing the tools that individuals need to manage their own health, emotions, relationships and intellect. It is imperative that educators continue to look into best practices and scientific research to determine what we can do to educate children that live with autism and to inspire in them a drive to continue to grow and to learn on their own.

The term Autism Spectrum Disorder is a diagnosis that describes a range of symptoms that exist within the umbrella of autism. Autism is a life long, neurobiological disorder that has a profound impact on the way a child perceives his environment, the way he communicates, the manner in which he learns and relates to the people and objects in his world. Each and every child presents a myriad of symptoms that often change over time. The key to unlocking the grip of autism resides in working with the brain to develop new pathways and repair

inefficient ones. One can be sure that this is far from a cut and dried approach to treatment.

Some children are so profoundly affected by autism that the impact is quite obvious in their physical appearance and the way that they present themselves. But, autism is not always visibly noticeable, especially in those individuals that have more language skills and a more social nature.

Metaphorically, autism can resemble an iceberg: odd behaviour and social interactions may be just the “tip of the iceberg;” the protruding part. However, the core features of the disorder are the severe behavioural, language, communication and social deficiencies that will pervade an individual’s life and his relationships. These represent the ice under the surface and they are the most devastating part of the iceberg and of autism. It is vital that we not assume a “level” of autism based on a child’s behaviour or interactions with others. It is the range in severity, complexity and the changing nature of autism that makes parenting and teaching these children both a joy and a challenge!

In spite of the complex nature of Autism, there are some general sets of symptoms outlined in the Diagnostic Statistical Manual – IV (DSM – IV) that give us parameters in planning for a child with an Autism Spectrum Disorder.

The “triad” of impairments that are required for a diagnosis of Autism are:

- 1) Impairments in communication
- 2) Impairments in social interaction
- 3) Patterns of behaviour, interests and/or activities that are restricted, repetitive, or stereotypic

The diagnosis is much more complicated than what is listed above but for our purposes a more simplistic version will suffice. Although not explicitly described in the diagnosis, the sensory problems and anxiety issues that an individual endures are of great importance to parents and educators and so they are included here:

- 4) Unusual responses to sensory experiences
- 5) Anxiety

Learners with ASD often demonstrate unique challenges:

- Differences in motivation compared to more typically developing students
- Decreased or absent background knowledge and skills that help the child to learn from typical learning environments (i.e., lack of pre- learning skills, lack of imitation skills, lack of communication)

- Uneven profile of strengths and weaknesses (these are different for each child with ASD)
- Challenging behaviours that often interfere with learning and socialization
- Lack of a sense of affiliation with students and teachers
- Dysfunctions in executive function, “Theory of Mind,” and central coherence
- Auditory processing difficulty
- Challenges in regulating and/or shifting attention
- Difficulties with the sensory system

The responsibility of educating a child with autism is not a simple one. To claim that using ABA is easy would be misleading. Some ABA methods may be more straightforward and familiar; begin with these. Extend your comfort zone gradually. We don't expect our students to grasp the entire content and process of the curriculum as soon as it is introduced so we cannot expect ourselves to become skilled in applied behaviour analysis in one year! Take one step at a time, practice some aspects of ABA and work with them. Collaborate with other teachers, experts in autism and other professionals. Ask questions and share frustrations. But don't stop there. Keep learning, keep practicing and above all, keep believing that it is in the trying that you will succeed; not in the intention of trying. Bring enthusiasm to the task of teaching children with autism and you will meet with more success than you ever dreamed possible.



**Instruction begins when you, the teacher,  
learn from the learner; put yourself in his  
place so that you may understand... what he  
learns and the way he understands it.**  
Soren Kierkegaard



## **Kieran's Story**

On January 4, 1996 my husband and I were blessed with our second child, a baby boy that we named Kieran. He was our blond haired beauty and a truly special gift. At the time I had no idea of the depth and breadth of the gift he really was. Like any new mother, I thought our newborn baby boy was the most special boy in the world! His emotional outbursts, juxtaposed with his quiet solitude made him even more endearing (for the most part). As time passed we were convinced that his crying and sleep problems had to be just the normal colicky problem that many parents contend with. He learned how to walk without crawling and his physical growth was normal.

But by the time Kieran was 2 1/2 years old and he had still not uttered a word, not even "mom or dad." I can't remember any other specific red flags about him at that time but I do remember my mom suggesting that his development needed attention and that I had better begin the process of getting him assessed (my parents were both educators with 30 plus years of experience). I am haunted by the day that she leaned across the table and said, "Ask them about autism."

It couldn't be autism (I reassured myself); he didn't rock back and forth, and stare at specks of dust! After all, my son couldn't speak but he looked normal! I tried to convince myself of this, but as time wore on we began to see a "darker and wilder" side of Kieran.

On February 16, 2000 our only son, Kieran was diagnosed with autism. Our world fell apart in a way that no words could ever describe. Without consciously knowing it we had built a set of expectations around raising a boy and all that goes with his development into a man. We had dreams of sports activities, hordes of teenage males eating us out of house and home, girlfriends, parties, college or university and eventually marriage and grandchildren. It did not take us long to have every one of those dreams shattered. Words like severe social and communication impairments, restricted, repetitive and stereotyped patterns of behaviour, interests, and activities, lack of symbolic or imaginative play became the catch words for describing our son and his future. Kieran was placed on the far left of the autism spectrum: severe. Our lives were about to change. Forever.

Our son existed in a self contained state of social isolation. He had no innate ability to connect with others appropriately. The quietist room inside or the most isolated refuge outside was where we would expect to find him. Kieran seemed unable to distinguish between the adults of family and those of non-family. Climbing into the laps of unsuspecting guests and embracing strangers was disconcerting to us in those early years. His ease with adults sharply contrasted to an apparent dislike of male peers. While physically attacking unsuspecting boys, both large and small, he provided a protective stance for some of the girls in his surroundings.

Those early, formative years of play were shallow, infrequent and often short-lived. Instead, Kieran developed an early addiction to the isolation of television. His repetitive immersion in that world further diminished any social interaction but revealed an ability to echo verbatim what he heard. Those scripts proved to be a light in the dark for us as they revealed a hidden capacity of speech and gave clear evidence of his inherent capabilities.

Kieran became intensely terrified of computers, fax machines and houseflies. He hated sunlight, tags or seams in his clothes and he refused to eat almost everything. When frustrated he screamed at ear piercing pitch and he would hit, rip and destroy anything that he could touch.

The torment within him was heartbreaking. He would hide under tables, cry frequently and inconsolably. Early in life Kieran had a persistent intolerance to changes in routine. Long lasting episodes of tears and pervasive sadness were often the result of taking a detour while traveling, changing the order of errands or altering anything in his environment. The sensory "overload" that haircuts, hair washes and nail cutting caused, created in him sheer terror and nothing less. Our son was a little Houdini in that he would wander off unnoticed in a matter of seconds. He had no regard for his safety. These few isolated vignettes illustrate a snapshot of our confused and troubled son and they point to the despair of his little malfunctioning mind.

Finally, in January 2001, Kieran became one of the first children from Northern Ontario to be included in the province's "Early Autism Program" which meant that he would receive up to 40 hours/week of Applied Behaviour Analysis (ABA), specifically, Intensive Behavioral Intervention (IBI).

He began working for 20 hours/week with a trained instructor therapist named, Colleen. Within a month we began to witness the transformation of our little boy. The intensity of instruction was releasing his mind from its wiring malfunctions and showing us the true promise of a totally competent being. The change from a little boy who chose to be isolated from peers to a little boy who would seek interpersonal relationships has been a phenomenon. Where he once chose to retreat to his own private world, Kieran now pre-planned engagements with a newly discovered world of friends and playmates. Birthdays, school friends, siblings and cousins were now sources of anticipation and no longer targets of anger and isolation. The growth of an extensive vocabulary and desire to vocalize gave evidence of a totally new child who now chose to express a level of his happiness, his sadness and feelings about himself and those around him. It was as if we were meeting our child for the first time. Our little boy began to be able to articulate his feelings and his preferences without tearing apart a room. The spirit of the boy inside of him began to emerge and at last we tasted the sweetness of hope.

But, a year later, at his sixth birthday, Kieran “aged out” of the Early Autism Program” and our world crumbled once more. He was in Kindergarten and according to the government at that time, the plasticity of the brain in children at the age of six would not benefit to the same degree from IBI that children under six would. If it wasn’t so absurd and cruel I would have laughed.

The next year, Kieran’s progress slowed. His success had waned considerably. In grade one he struggled with concept development, fine motor skills, eye contact, social interactions, attention to task, and following instructions. I felt as though, once again, the real Kieran Krumins was trapped inside a shell and the only people that could get him out were not allowed access to him. The pain of watching our son slip back to his old ways was unbearable. He had an incredible teacher who loved him with all of her heart but she felt helpless against the strength of the autism. Kieran was well behaved in class but his teacher lamented that she didn’t feel he was truly learning. He would go through the motions of some activities and he would sit quietly and make no disruption. But, this teacher was wise for she knew that a lack of disruptive behaviour did not necessarily mean that a child was learning! The teacher realized that in spite of her best efforts, Kieran was enjoying the fact that no was able to break into his little world.

He received the absolute best attention that our school staff could give him based on their resources. But the needs of a child with autism require staff that are trained to deal with some of the hallmark characteristics of such a neurological brain disorder. The staff accommodated his behaviours and provided him with the more “typical” special education interventions. But, we (I was a teacher at our children’s school) weren’t equipped to provide the specific programming and curriculum that would meet Kieran’s psycho-educational needs and his learning style. We desperately wanted to find a way to incorporate ABA techniques into his regular programming at school since they had proven to be powerful during his early autism treatment.

Our little boy needed something more. Despite the fact that he had a terrific teacher his little mind was difficult to tap into. He had no real way of expressing what he knew and what he didn’t. Skills he learned in the class weren’t being transferred at home or even in other parts of the school! Meanwhile, my husband and I researched. We met with many people that told us that IBI would not work in a school setting. I was not convinced. I was even more perplexed that no one could offer an equally valuable replacement for this therapy. If he didn’t have IBI then how would he be taught? There had to be a way to tap into his mind and free him from the stronghold of his autism!

Our desperate need to reach Kieran once again, led us to Dr. Joel Hundert and his team at the Behaviour Institute in Hamilton, Ontario. He believed that ABA was valuable beyond the pre-school age. Armed with a team of willing therapists

and a psychologist who shared our aspirations, they created a private program using ABA (not just IBI) techniques.

We were determined to help Kieran to develop those aspects of himself that he found challenging and to use his strengths to motivate his learning. In essence, our goal was to make even his “uneven skill profile.” We guessed that he was an intelligent child that was simply unable to access the learning that happened in a regular classroom without some specialized techniques. Ideally, we had wanted these strategies to be used in a classroom setting. But, change is slow and we had to work with what the school boards were able to offer.

Knowing that our resources were very limited, advocating for the use of Applied Behaviour Analysis in schools became our family’s mission; second only to educating our son in the best methods we knew possible and raising our two daughters.

Like many families in North America, my husband and I knew that if change was going to happen we would have to promote it. Looking back, it was money, energy and time well invested. While our society still has a long way to go in terms of creating schools where every child is able to learn according to the way that their brain is created, I do believe that changes are happening. It must happen. Our society will not be able to financially or morally afford to discount the training of each child’s mind to reach its full potential. Our governments and school boards need to make clear standards that compel the use of scientifically proven methodologies.



**“He told me that his teachers reported that...he was mentally slow, unsociable, and adrift forever in his foolish dream.”**

**Hans Albert Einstein, on his father, Albert Einstein**



## **What is Applied Behaviour Analysis (ABA)?**

One branch of science that has held much hope for our students is Applied Behaviour Analysis. To be perfectly clear, Applied Behaviour Analysis is not new; not some old program that has a new name so that it can be heralded as “cutting edge.” It is old: time tested and true. ABA methods have been proven and researched over the course of many years. Applied Behaviour Analysis is a science; the study of behaviour and how we can apply the principles of behaviour to all learning. It is a broad term that it is used to describe a variety of interventions that can be used to shape and change behaviour and teach new skills.

ABA is more common to us than we realize. It's just that we don't call what we naturally do, ABA. Let me explain: If you have ever been desperate to get your child to complete his chores or his homework you probably used aspects of applied behaviour analysis without even knowing it. Maybe you created a list of some of your specific expectations and timelines; then you made a chart and each time a task was completed you might have rewarded your child with a sticker. After a predetermined number of stickers your child may have earned a larger reward such as a treat or a movie. If the expectations were not met I would guess that no stickers or rewards were granted. In our home, time for video games is earned by meeting certain expectations. Our son calls it “buying access” to his video games.

One of my colleagues brings home our class pet (a rat named Oliver) for the weekend if her son has earned a predetermined number of checkmarks for clearly defined appropriate behaviours at school. Maybe you reminded your child of what she would say when she was complimented.

If you have ever been anxious for your husband to finish the renovations that he began 4 months before and he hasn't quite gotten back to finishing them, then there is a good chance that you have used some kind words of “encouragement” (verbal prompting). Then you decided that it was time to “up the ante” and maybe offer a reward for having it done by a certain date; perhaps a weekend of fishing would entice him (reinforcement). When that didn't work you pulled the final card and called a contractor and gave your husband the bill (punishment: response cost)! ABA is certainly far more than a system of tokens, rewards and punishments but it is not a foreign concept to most of us.

Human beings have an ability, maybe even an instinct, to know how to get people to behave in a way that they want them to behave. Marketing giants know what makes humans spend and what strategies can be employed to get people to let go of their hard earned money. Coaches, employers, teachers and managers know what tactics they can employ to motivate and inspire the people

with whom they work. We use strategies to influence the behaviour of people every single day.

ABA methods are not the only way to teach kids with autism. It is the history of success and the structured, systematic methodology that drives parents and advocates to strive for the implementation of ABA methods in schools. To be clear, ABA principles match the needs and learning styles of students in special education in general and in autism in particular. Parents, educators and the professionals that work with students with autism need to decide which areas of learning and curriculum best fit an ABA approach. Academic goals and “autism curriculum” such as, communication, language, self regulation, and adaptive living skills can be improved using this approach. ABA should always be used for positive behaviour change.

Before we move into a far more detailed account of implementing ABA in the classroom, it would be useful to know just where ABA came from and why it is still heralded as the most scientifically proven way to treat and teach children with autism.



### **What it is *Not***

ABA is not synonymous with IBI (Intensive Behavioural Intervention). IBI is one component or one methodology under an ABA umbrella. IBI is the course of treatment that many children with autism are subject to in the early intervention programs in order to help them to get ready to learn, to increase basic communication and to decrease any behaviours that may interfere with learning.

Those young children with autism that are fortunate enough to receive it, are trained in an intensive format (20- 40 hours per week) by one or more trained therapists, supervised by Behaviour Analysts and overseen by a behavioural psychologist. IBI is most often delivered in a private setting in a one to one ratio.