



Applied Behaviour Analysis (ABA) Outside the Box

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Overview

- ABA and “the box”
- Key teaching methodologies
- Case presentation – Jake
 - Preparing for school:
- Case Presentation – Thomas
 - PECS and Play

Behaviour therapy

- ABA is basically behaviour therapy:
- Operant learning:
 - Positive consequence – higher likelihood of recurrence
- Social learning
 - Imitation
- Behaviours can be learned, unlearned
- Classical conditioning
 - Internal reward, intrinsic motivation

ABA Theory - research

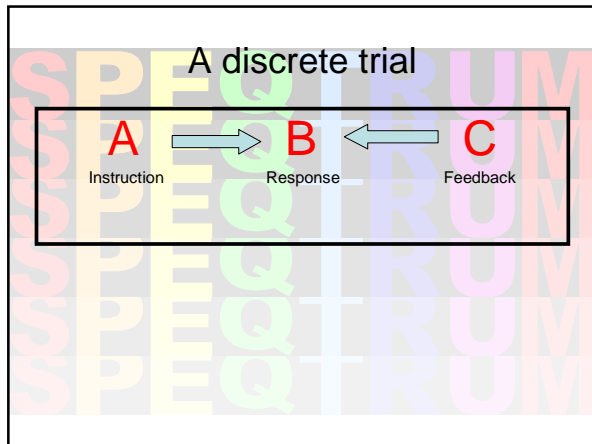
- Lovaas (1987)
 - Children < 4years
 - Average of 40 hours per week
 - 2-3 years of treatment
 - 17/19 made significant improvements

ABA research

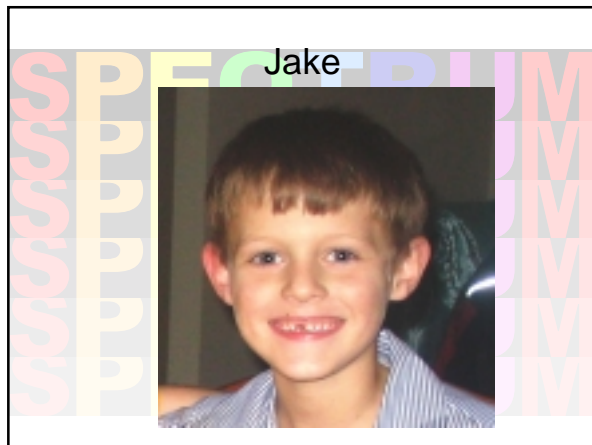
- Sallows & Graupner (2005)
 - Following 4 years @ 30 hours, 48% mainstream school.
 - Age between 24 and 42 months at intake
- Other (5 partial replication studies)
 - 15 hours to 30 hours
 - All preschool aged children
- Birnbrauer & Leach (1993)
 - 19 hours: poor play skills and self-stimulatory behaviours on follow-up – noted their program didn't address these areas

How we teach

- Discrete Trial Teaching
 - 1) breaking a skill into smaller parts;
 - 2) teaching one sub-skill at a time;
 - 3) providing concentrated teaching;
 - 4) providing prompting and prompt fading as necessary; and
 - 5) using reinforcement procedures.



- ### Errorless learning
- Used when teaching new skills
 - Keeps success rate, self-esteem high
 - Insert a prompt in A (instruction) to make sure B (response) is correct
 - Prompts used for correcting mistakes
 - Prompts may be
 - Recency prompts
 - Physical prompts (location)
 - Gestures from therapist
 - Verbal prompts
 - Distractor trials



- ### Case Study
- Jake – 8 years
 - Presenting concerns (6 years when referred) due to anxiety in the school setting, school refusal, and concerns regarding low rate of learning of academic material.
-
- A small version of the portrait of Jake, showing him from the chest up, smiling.

- ### Jake
- Developmental history:
 - Normal pregnancy and birth
 - Low birth weight, special care for 9 days
 - Reflux until 1 year of age
 - Late in rolling, walking
 - Late in imitation (emerged 1 year of age)
 - Hard to settle as a baby
 - Delayed speech – no babble, single word "mum" at 10months and 3 years

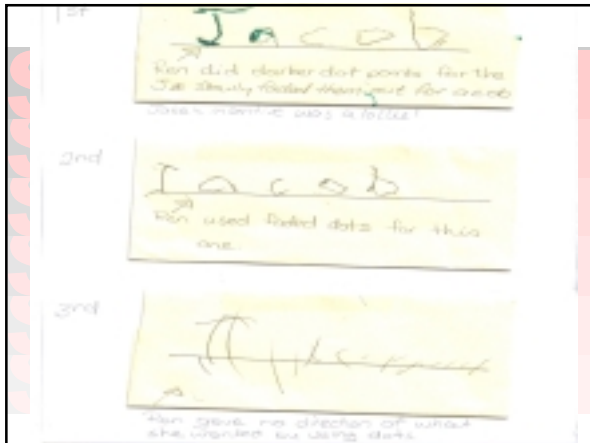
- ### Jake
- Repetitive in play – cleaning activities
 - Late to toilet train
 - Autism suggested by Speech therapist, Jake aged 2 years
 - Diagnosed Atypical Autism and Development delay (PDD-NOS) aged 4 years

Jake's learning

- Griffiths aged 3 – delayed in speech, cognition, gross and fine motor
- Struggled to learn colours
- Struggled following simple instructions (visuals used)
- Attended Early education / Special Ed from aged 3. Part time enrollment until aged 6

Jake's schooling

- Mainstream schooling with SEU support aged 6 (Pre-school/Prep)
- Grade 1 2007
- Grade 2 2008
- Barriers to learning:
 - Avoidance behaviours (talking)
 - Anxiety (too hard)
 - Masking (looks like working!) (confusion what to do)
 - Eg NAME



Why DTT?

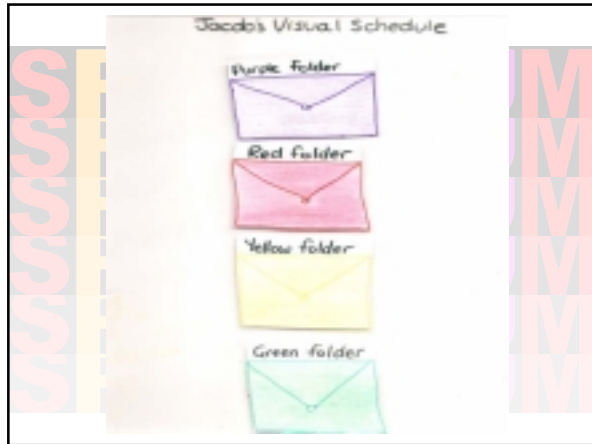
- Barriers indicated a more intensive 1;1 approach needed
- Skills not progressing – work not being completed
 - Mid 2007 – Jake not recognising letter sounds, numbers, sight words, writing.
- Anxiety

DTT for anxiety

- Indicators:
 - Perfectionistic, upset when corrected or when makes a mistake. Takes time to complete items, doesn't like leaving work unfinished.
- Concerns:
 - Responding to mistakes
 - Working to time completion not task completion
- Plan:
DTT and EL – minimise mistakes made
DTT – limited task completion opportunities.
Reinforcement for time completion, visual systems

ABA for Jake

- DTT and EL applied to areas of literacy, numbers.
- Visual system (coloured folders) to target task completion, attention span, and provide sense of achievement and self-esteem.
- Started age 6 years (mid year 1)
- Nadene trained in DTT and EL
- Minimum 1 hour teaching session per week



Example

- DTT to break down skills needed to money handling
- Shopping example
- Example: [Jake Shopping](#)

Shopping Breakdown

- Literacy – pictures as well as words
- Numeracy
 - no of pictures match no of items
 - price per item rather than 1 bill
- Money / coin recognition
 - Pay 1 category at a time
 - No of coins match no of items
- Goal to increase to 1 bill, pictures, numerals
- Generalise to actual setting

Example

- DTT for sight words – each word taught individually with high frequency and repetition
- Errorless learning to maintain success and self-esteem while learning sight words
- Prompts faded
- [Sight Words](#)

A	Prompt?	B	C
Big	Y –verbal /recency	Y	Y
Big		Y	Y
The		Y	Y
Treasures	Physical	Y	Y
Big		Y	Y
Look		Y	Y
Look		Y	Y
The		Y	Y
Big		Y	Y

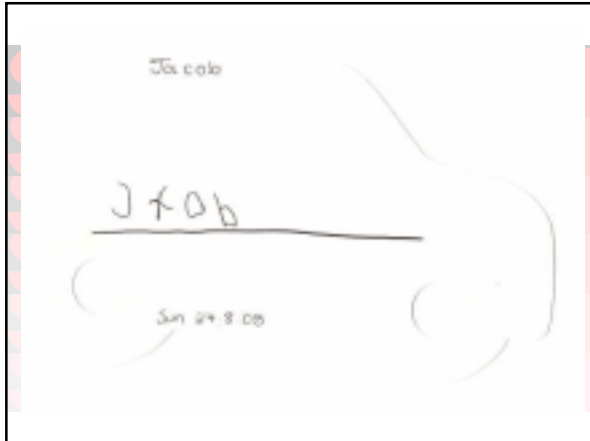
A	Prompt?	B	C
What word (big)		Y	Y
What word (the)		N	Try again
?	Verbal?	Y	Y
What word (look)	Elimination?	Y	Y
What word (look?)		Y	Y
What word (big)		Y	Y
What word		N	Try again
What word	P – starting sound	Y	Y
What word		Y	Y
Do this		Y	Y

Jake's Progress

- Home teaching for approx 1 year – 50 to 60 hours of individual teaching
- Sight words:
 - 1 to 2 new words per session
 - Total of 10 sight words
- Number recognition 1 to 10
- Letter recognition
 - Lower case 75%
 - Upper case 50%

Jake's progress

- Writing first name
- Counting 1 to 10
- Money skills – coin recognition
- Listening skills (2 step instructions)
- Next goal - Typing



Jake in action

- Bringing together visual schedule, DTT, EL and reinforcement:
- [Shopping at Big W - now](#)

Thomas



Case Study

- Thomas
- ABA beyond the table - Picture Exchange Communication and Play Intervention
- Early Intervention program from aged 2.5 years (2002 to 2005)

- Birnbrauer & Leach (1993)
 - 19 hours: poor play skills and self-stimulatory behaviours on follow-up – noted their program didn't address these areas

- ### Why Play?
- The earlier play skills can be taught to children, the better the chance that rituals and stims decrease.
 - Intruding on the child's isolation is an important way of establishing contact
 - Through play, child learn
 - Communication
 - Alternatives to rituals
 - A way to engage with adults and peers
 - Eye contact, turn taking and other social skills
 - Attention and concentration

- ### Thomas
- 3 year old non-verbal male with ASD diagnosis
 - Family key concerns were screaming/ tantrums, visual self-stimulatory behaviours, language / communication, play skills, cognitive development.
 - Priorities: language, screaming
 - As behaviour and compliance necessary to teach language -
 - Commenced with behaviour management

Priority	Development area	Difficulties & action plan
1	Behaviour	Kicks, hits if not getting own way. Screams when frustrated due to poor communication skills Does not comply with requests from adults (eg come here) despite adequate receptive language
2	Language	Poor expressive- knows few words. Hand leads adults to desired items. Seeing Speech Therapist to implement picture communication and build skills Receptive language stronger than expressive
4	Daily Living skills	Dressing – parents dress Eating – good appetite, eats at table, prefers hands to spoon Hygiene – trying to teach hand washing and brushing teeth – needs close guidance Toileting – day trained, adults remind to go to toilet (no initiation) Sleeping – maintains appropriate sleep cycle
3	Social skills & Play	Will play alongside other children with limited sharing of materials. Restricted range of play interests, prefers trucks and trains. Some repetitive play – lines trucks up. No pretend play. Strong eye contact. No greetings. Sharing difficult – will scream.
5	Motor skills	Fine motor – fist grasp for scribbling on paper. Can use spoon prefers not to. Can use computer mouse. Gross Motor – good with running, climbing. Jumping difficult – toe walking
	Emotions	No separation anxiety. Not clingy in social situations.
	Early Learning	Loves numbers, says numbers, tries to count. Likes looking at books, lets Mum share books and read
	Attention	Good attention to toys – will set up cars, push them around for 15-20 minutes. Plays in sandpit for up to 40 minutes. Watches 90 minute dvd or favourite TV program
	Family Life	Loves brothers, brothers very patient. Brothers would like to play more. Supportive extended family, although live interstate

- ### Outside the box
- Moving beyond traditional ABA: building on behaviour foundations
 - 10 hours of teaching time weekly
- Language

Behaviour

- ### Case example
- SLP provided training for the team in the Picture Exchange Communication System (PECS)
 - Team focus on setting up “sessions” to target requesting of reinforcers (high motivation)

- Video footage of PECS
 - [I want pink open](#)
 - [I want train](#)
 - [Puzzle](#)

- ### Thomas & Play
- Functional toy play
 - Physical play
 - Sensory Play
 - Language (songs, rhymes)
 - Peer play and sibling play
 - Co-operative Play
 - In ABA – may or may not include above

- ### Video footage - Goals
- Targets were play expansion and play scripts – a greater range of play interests and greater range of actions with the one toy
 - Increase interests in other play activities (animals, tractor & Trailer)
 - Increase range of scripts with train set
 - Functional play (child preference to visual stim on wheels – as seen in video footage)
 - Increase engagement with peers / play therapist
 - Increase eye contact and sharing of emotion through social play & singing

- Footage of play – Train set, tractor & animals, tractor & people (expansion & functional)
 - [Train 1](#)

- ### Thomas in action
- [Thomas reading age 8](#)
 - Play scripts typical of a younger child but..
 - Joint attention to play buddies
 - Narrating play / commenting
 - Answering questions verbally
 - Expansion of interests (not a train in sight)
 - Range of play scripts (cooking, eating, social)
 - Body position
 - Eye contact

Thank-you!