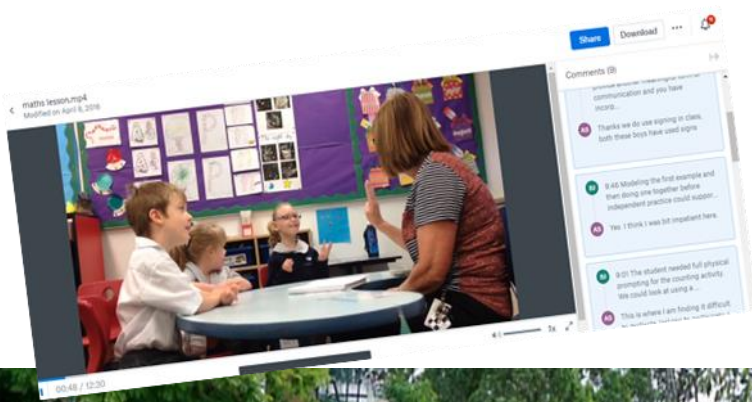# Building Teacher Capacity of Research-Based Practice for Students with Disability: Individualized Teacher-Directed Professional Development

Dr. Bree Jimenez

Special Education Pedagogy & Research Consultant, Mater Dei School
Honorary Research Associate, University of Sydney

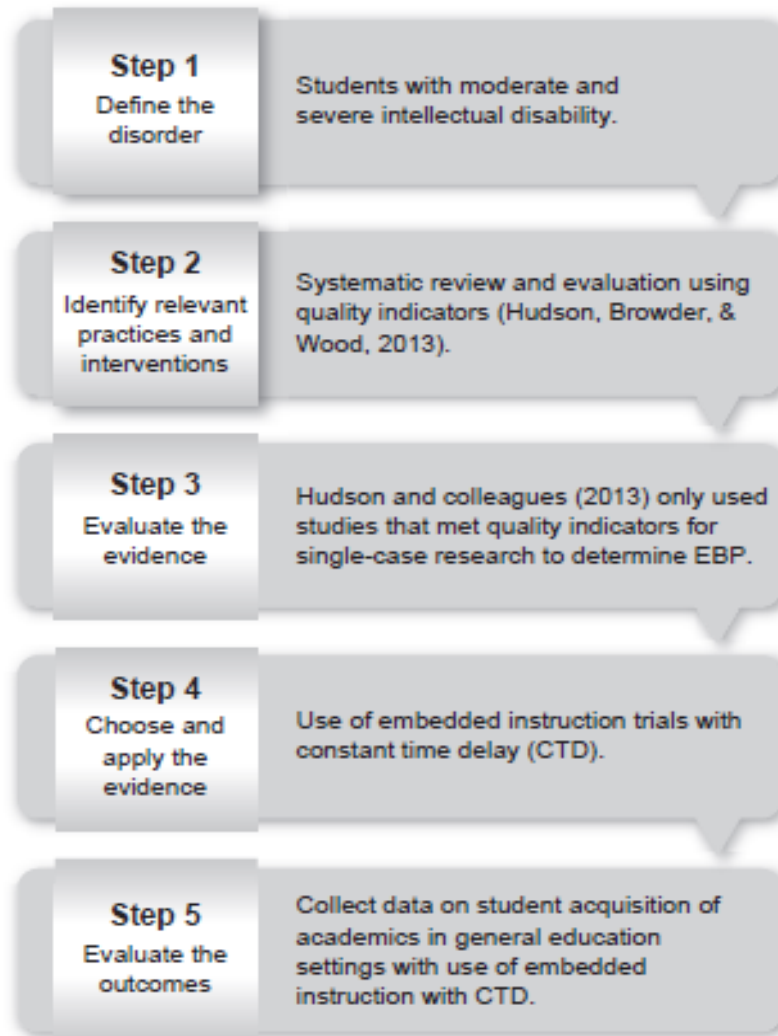# Who we are...Who we aspire to be!

Evidence-Based Practice

Wong, C., Odom, S. L., Hume, K. Cox, A. W., Fettig, A., Kucharczyk, S., … Schultz, T. R. (2013). Evidence-based practices for children, youth, and young adults with ASD

Spooner, Knight, Browder, & Smith (2012). Evidence-based practices for teaching academics to students with

Implementation Sciences (Cook & Odum, 2013)

EBPS for academic learning in general education.

Browder, Wood, Thompson & Ribuffo (2014). EBPs for students with severe disabilities. CEEDAR Center: IC

Step 1
Define the disorder

Students with moderate and severe intellectual disability.

Step 2
Identify relevant practices and interventions

Systematic review and evaluation using quality indicators (Hudson, Browder, & Wood, 2013).

Step 3
Evaluate the evidence

Hudson and colleagues (2013) only used studies that met quality indicators for single-case research to determine EBP.

Step 4
Choose and apply the evidence

Use of embedded instruction trials with constant time delay (CTD).

Step 5
Evaluate the outcomes

Collect data on student acquisition of academics in general education settings with use of embedded instruction with CTD.

Note. See West, McCollow, Kidwell, Umbarger, & Cote (2013).

From:
Shurr, Jimenez, & Bouck (2018)

Professional Development

o Kretlow & Bartholomew (2010) coaching changes pre-service and in-service teachers' implementation of EBPs.

o Characteristics of a highly-effective elementary schools (student outcomes) = immersion of teachers in high-quality PD (McLeskey, Waldron, and Redd; 2014)

  o Strong focus on learner-centered (teacher-directed) professional development (TDPD) with classroom embedded coaching and a strong learning community.

o TDPD: identification of teacher needs that are consistent with their beliefs and knowledge. (Jimenez & Barron, 2019; McLesky 2011; McLesky et al., 2014)

Purpose of PD

o Learner centered PD has been show to be effective: interviewing educational teams to determine needs for PD, then providing in-service with small groups on Embedded Instruction (EI) to support their direct needs in supporting students with severe ID within inclusive elementary classrooms (Jimenez & Barron, in preparation)
o Previous research on PD/Coaching
 o Increase fidelity of implementation of EBP
 o Increase student outcomes
o ***NEED: Extend the research & practice***
 o ***Teachers of students with ID & ASD***
 o ***School wide approach to building ongoing TDPD***
 o ***Self-directed professional learning (Jimenez & Barron, 2019; Shurr, Hirth, Jasper, McCollow, & Heroux, 2014)***

•6

The Plan

Self Reflect
Set Goals

Acquisition
Co-Plan
Research
Participate

Fluency
Implement
Instruct
Teach

Maintenance
Observation
Feedback
Adjust

Generalisation

The Plan — Self Reflect Set Goals; Acquisition Co-Plan Research Participate; Fluency Implement Instruct Teach; Maintenance Observation Feedback Adjust; Generalisation

Professional Standards for Teachers	Research and EBPs for Special Education	EBPs for population	Learning Stages of Implementation[5] I am . . .				
AITSL[1] (based on those chosen by Mater Dei Teacher development and performance feedback)	High Leverage Practices in Special Education[2]	Based on Innovation Configurations of EBPs[3] & EBPs from for Children, Youth, and Young Adults with Autism Spectrum Disorder[4]	**Acquisition** Not currently aware of/or using practice	**Fluency** Using practice; However, I may not be consistent or I am unsure of my fidelity of implementation	**Maintenance** Using practice; my fidelity is sound; However, I would like to be able to use with greater ease, as part of my every day practice to support a learning goal/student	**Generalization** Using practice with ease and fidelity; However, when presented with a new unit/student; I may need additional support to use efficiently	Using practice with ease, fidelity, and can problem-solve usage across multiple setting/ contexts.
3.2 Plan, structure and sequence learning programs 3.3 Using teaching strategies 3.4 Select and use resources 3.5 Use effective classroom communication 4.1 Support student participation 4.2 Manage classroom activities	HLP 8 Provide positive and constructive feedback to guide students' learning and behaviour. HLP 12 Systematically design instruction toward a specific learning goal. HLP 15 Provide scaffolded supports. HLP 16 Use explicit instruction	**1.0 How to Teach -Systematic Instruction** 1. Prompting & fading • Least Intrusive Prompting • Simultaneous Prompting • Stimulus Prompts • Constant Time Delay					
		1.2 - Reinforcement • Individual R assessments • Fading of					
		1.3 - Task analysis; discrete trial					
		1.4 – Generalization					
3.1 Establishing challenging learning	HLP 14 Teach cognitive and	**2.0 How to Teach - Self-Directed Instruction**					

Carla – Classroom Teacher – K/1 Gregory

Story – Based Lessons

Research:
- Browder, D. M., Trela, K., & Jimenez, B. (2007). Training teachers to use Story-Based Lessons
- Mims, P. J., Browder, D. M., Baker, J. N., Lee, A., & Spooner, F. (2009). Increasing comprehension
- Mims, P. J., Hudson, M. E., & Browder, D. M. (2012). Grade-level biographies

Evidence-Based Practice:
shared story reading to promote literacy skills (skills that increased access to age appropriate literature, e.g., listening comprehension) and reading independence (e.g., vocabulary, comprehension), including emergent literary skills (Hudson & Test, 2011)
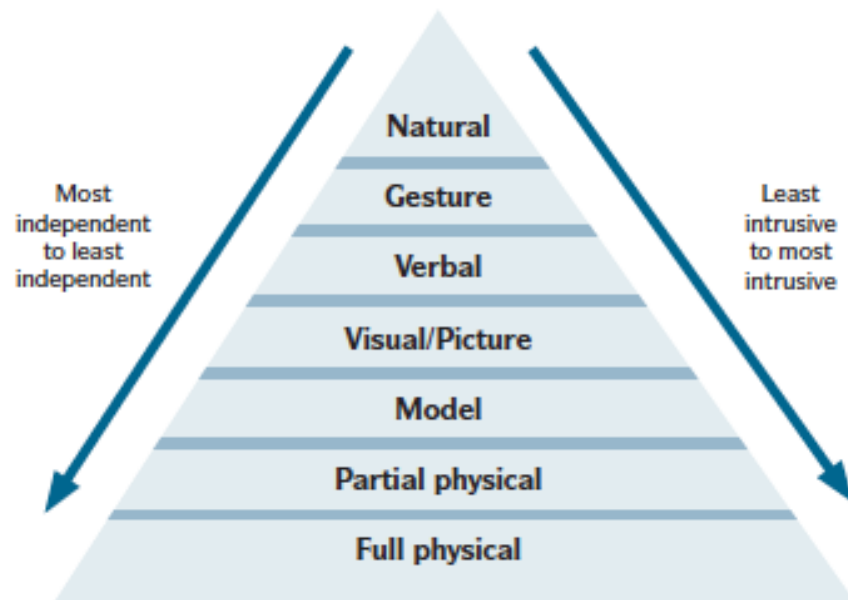
Attention Getter	
Vocabulary	
Prediction	
Title	
Author	
Open Book	
Read Story	
What did we learn?	

Evidence-Based Practice

- Task-analysis
- Time Delay for Vocabulary
- Use of Least-Intrusive Prompts
  - Each step
  - Comprehension questions

Adapted from: Browder, D. M., Trela, K., & Jimenez, B. (2007

Most independent to least independent

Natural
Gesture
Verbal
Visual/Picture
Model
Partial physical
Full physical

Least intrusive to most intrusive

Jimenez, Courtade, Browder (2013). Six Successful Strategies for Teaching to the Standards. Verona, WI. Attainment Company.
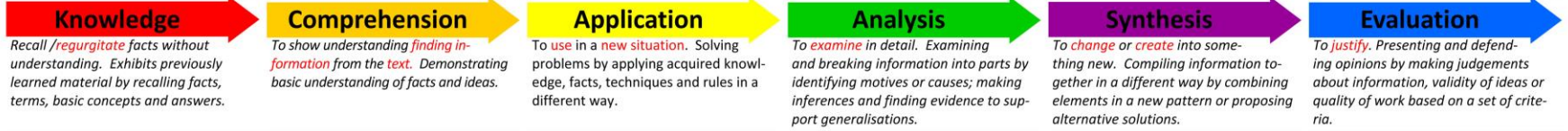
Example of One of the Steps from the Task Analysis

Another . . . Example of One of the Steps from the Task Analysis

Revised Blooms & Least Intrusive Prompts

◄─── LOW LEVEL THINKING SKILLS ───► ◄─── HIGH LEVEL THINKING SKILLS ───►

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Recall /regurgitate facts without understanding. Exhibits previously learned material by recalling facts, terms, basic concepts and answers.	To show understanding finding information from the text. Demonstrating basic understanding of facts and ideas.	To use in a new situation. Solving problems by applying acquired knowledge, facts, techniques and rules in a different way.	To examine in detail. Examining and breaking information into parts by identifying motives or causes; making inferences and finding evidence to support generalisations.	To change or create into something new. Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions.	To justify. Presenting and defending opinions by making judgements about information, validity of ideas or quality of work based on a set of criteria.

Key words:

Knowledge
Choose, Copy, Define, Duplicate, Find, How, Identify, Label, List, Listen, Locate, Match, Memorise, Name, Observe, Omit, Quote, Read, Recall, Recite, Recognise, Record, Relate, Remember, Repeat, Reproduce, Retell, Select, Show, Spell, State, Tell, Trace, What, When, Where, Which, Who, Why, Write

Comprehension
Ask, Cite, Classify, Compare, Contrast, Demonstrate, Discuss, Estimate, Explain, Express, Extend, Generalise, Give examples, Illustrate, Indicate, Infer, Interpret, Match, Observe, Outline, Predict, Purpose, Relate, Rephrase, Report, Restate, Review, Show, Summarise, Translate

Application
Act, Administer, Apply, Associate, Build, Calculate, Categorise, Choose, Classify, Connect, Construct, Correlation, Demonstrate, Develop, Dramatise, Employ, Experiment with, Group, Identify, Illustrate, Interpret, Interview, Link, Make use of, Manipulate, Model, Organise, Perform, Plan, Practice, Relate, Represent, Select, Show, Simulate, Solve, Summarise, Teach, Transfer, Translate, Use

Analysis
Analyse, Appraise, Arrange, Assumption, Breakdown, Categorise, Cause and effect, Choose, Classify, Differences, Discover, Discriminate, Dissect, Distinction, Distinguish, Divide, Establish, Examine, Find, Focus, Function, Group, Highlight, In-depth discussion, Inference, Inspect, Investigate, Isolate, List, Motive, Omit, Order, Organise, Point out, Prioritize, Question, Rank, Reason, Relationships, Reorganise, Research, See, Select, Separate, Similar to, Simplify, Survey, Take part in, Test for, Theme, Comparing

Synthesis
Adapt, Add to, Build, Change, Choose, Combine, Compile, Compose, Construct, Convert, Create, Delete, Design, Develop, Devise, Discover, Discuss, Elaborate, Estimate, Experiment, Extend, Formulate, Happen, Hypothesise, Imagine, Improve, Innovate, Integrate, Invent, Make up, Maximise, Minimise, Model, Modify, Original, Originate, Plan, Predict, Produce, Propose, Reframe, Revise, Rewrite, Simplify, Solve, Speculate, Substitute, Suppose, Tabulate, Test, Theorise, Think, Transform, Visualise

Evaluation
Agree, Appraise, Argue, Assess, Award, Bad, Choose, Compare, Conclude, Consider, Convince, Criteria, Criticise, Debate, Decide, Deduct, Defend, Determine, Disprove, Dispute, Effective, Estimate, Evaluate, Explain, Give reasons, Good, Grade, How do we know?, Importance, Infer, Influence, Interpret, Judge, Justify, Mark, Measure, Opinion, Perceive, Persuade, Prioritise, Prove, Rate, Recommend, Rule on, Select, Support, Test, Useful, Validate, Value, Why

Actions: / Outcomes:

Knowledge
Actions: Describing, Finding, Identifying, Listing, Locating, Naming, Recognising, Retrieving
Outcomes: Definition, Fact, Label, List, Quiz, Reproduction, Test, Workbook, Worksheet

Comprehension
Actions: Classifying, Comparing, Exemplifying, Explaining, Inferring, Interpreting, Paraphrasing, Summarising
Outcomes: Collection, Examples, Explanation, Label, List, Outline, Quiz, Show and tell, Summary

Application
Actions: Carrying out, Executing, Implementing, Using
Outcomes: Demonstration, Diary, Illustrations, Interview, Journal, Performance, Presentation, Sculpture, Simulation

Analysis
Actions: Attributing, Deconstructing, Integrating, Organising, Outlining, Structuring
Outcomes: Abstract, Chart, Checklist, Database, Graph, Mobile, Report, Spread sheet, Survey

Synthesis
Actions: Constructing, Designing, Devising, Inventing, Making, Planning, Producing
Outcomes: Advertisement, Film, Media product, New game, Painting, Plan, Project, Song, Story

Evaluation
Actions: Attributing, Checking, Deconstructing, Integrating, Organising, Outlining, Structuring
Outcomes: Abstract, Chart, Checklist, Database, Graph, Mobile, Report, Spread sheet, Survey

Questions:

Knowledge
Can you list three ...?
Can you recall ...?
Can you select ...?
How did _____ happen?
How is ...?
How would you describe ...?
How would you explain ...?
How would you show ...?
What is ...?
When did ...?
When did _____ happen?
Where is . . . ?
Which one ...?
Who was ...?
Who were the main . . . ?
Why did ...?

Comprehension
Can you explain what is happening . . . what is meant . . . ?
How would you classify the type of ...?
How would you compare ...?contrast ...?
How would you rephrase the meaning ...?
How would you summarise ...?
What can you say about ...?
What facts or ideas show ...?
What is the main idea of ...?
Which is the best answer ...?
Which statements support ...?
Will you state or interpret in your own words ...?

Application
How would you use...?
What examples can you find to ...?
How would you solve _____ using what you have learned ...?
How would you organise _____ to show ...?
How would you show your understanding of ...?
What approach would you use to...?
How would you apply what you learned to develop ...?
What other way would you plan to ...?
What would result if ...?
Can you make use of the facts to ...?
What elements would you choose to change ...?
What facts would you select to show ...?
What questions would you ask in an interview with ...?

Analysis
What are the parts or features of ...?
How is _____ related to ...?
Why do you think ...?
What is the theme ...?
What motive is there ...?
Can you list the parts ...?
What inference can you make ...?
What conclusions can you draw ...?
How would you classify ...?
How would you categorise ...?
Can you identify the difference parts ...?
What evidence can you find ...?
What is the relationship between ...?
Can you make a distinction between ...?
What is the function of ...?
What ideas justify ...?

Synthesis
What changes would you make to solve...?
How would you improve ...?
What would happen if...?
Can you elaborate on the reason...?
Can you propose an alternative...?
Can you invent...?
How would you adapt _____ to create a different...?
How could you change (modify) the plot (plan)...?
What could be done to minimise (maximise)...?
What way would you design...?
Suppose you could _____ what would you do...?
How would you test...?
Can you formulate a theory for...?
Can you predict the outcome if...?
How would you estimate the results for...?
What facts can you compile...?
Can you construct a model that would change...?
Can you think of an original way for the ...?

Evaluation
Do you agree with the actions/outcomes...?
What is your opinion of...?
How would you prove/disprove...?
Can you assess the value/importance of...?
Would it be better if...?
Why did they (the character) choose...?
What would you recommend...?
How would you rate the...?
What would you cite to defend the actions...?
How would you evaluate ...?
How could you determine...?
What choice would you have made...?
What would you select...?
How would you prioritise...?
What judgement would you make about...?
Based on what you know, how would you explain...?
What information would you use to support the view...?
How would you justify...?
What data was used to make the conclusion...?

Bloom's Taxonomy: Teacher Planning Kit

Remembering - (asks learners to recall or remember information)

All: Point to the picture of the lamb
Mother sheep died. Who died?

Some: Who is the story about?

Few: Who else is in the story?

Analyzing - (asks learners to compare two different things)

All: Let's put these pictures into two columns. One column is for what Lamb did in the story and the other column is for what you do?

Some: Lets make a picture diagram for what we know about each animal in our story 'mother'. Who wanted to be lamb's mother.

Few: When the boy told lamb he would be his mother, how did lamb feel?

Creating - (asks learners to create a new product of point of view)

All: Show me the picture of what this story is about?

Some: What might be another title for this story?

Few: What would happen to animals if they had no mother?

Applying - (asks learners to use information in a new way)

All: The Lamb is crying are you crying?

Some: Lamb misses his mother? How do you feel about your mother?

Few: This story is about a lamb. Where do lambs live? What else do you know about lambs?

Evaluating - (asks learners to justify a stand or defend a decision based on criteria)

All: Lamb is sad because he lost his mother. How does lamb feel?

Some: How would you feel if you lost your mother?

Few: What would you do if you lost your mother?

Understanding - (asks learners to explain ideas or concepts)

All: What happened last?

Some: Put these events as first, second, and last

Few: Put these pictures in order to show what happened in the story (more than 3 pictures)

Austin's Goals

Personalised Learning Plan (PLP) goal

Austin will answer three literal questions and two inferential questions during story time on three consecutive occasions

Links to the NSW Syllabus

ENe-1A *communicates with peers and known adults in informal and guided activities demonstrating emerging skills of group interaction.*

ENe-4A *demonstrates developing skills and strategies to read, view and comprehend short, predictable texts*
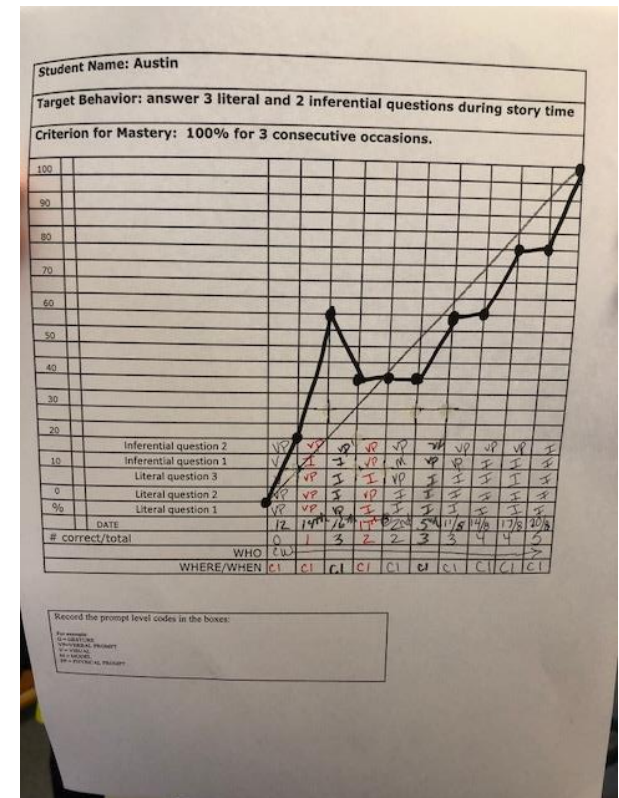
STORY BASED LESSONS – Generalising

Story-based Elementary Math
Browder, Jimenez, Spooner,
Saunders, Hudson, & Bethune (2012)
Jimenez & Kemmery (2012)

Wonder Stories in Science
Jimenez, Knight, & Browder (2012)

Read-Alouds in HISE
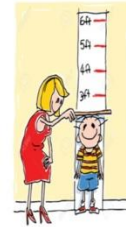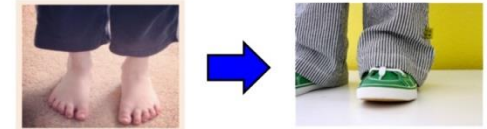•Courtade, G., Gurney, B., & Carden, R. (2017).
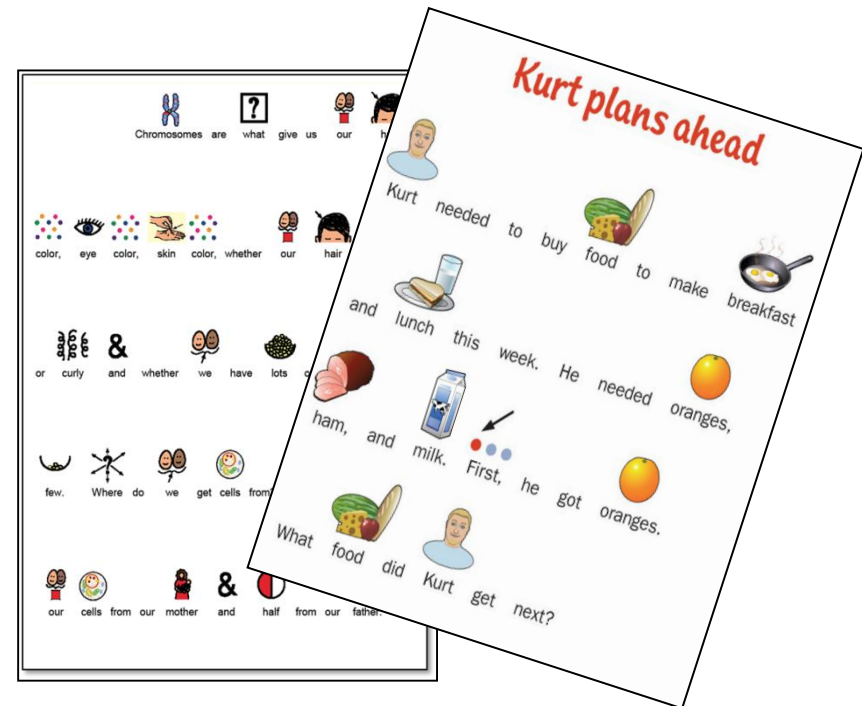
Wonder Story Example: Geography

My son Leo is 2 years old.

I noticed in the holidays that his pants are

He has gotten taller.

I went to the shop to buy Leo some new pants in a larger size.

Leo and I looked at the clothes.

I Looked at the tags on the clothes to see if I had the right size, when I noticed the writing, "Made in China".

This means that these clothes were made in a country called China.

Leo asked me, "Where is China?"

Asia

China

I told him that the country, China, is in a continent called Asia.

We looked at more tags and found more where clothes were made.

Leo and I wondered....
Where are these countries?
What is it like in these countries?
Why are our clothes made there?

3. Story

Gemma – Classroom Teacher – 5 MacKillop

They wanted to share their lollies between 4 people.

and ___. There were 12 lollies.

How many lollies would each person get?

How many lollies would each person get?

3

1	How many groups? (how many people?)	? ④	✓
2	Draw that number of groups (the number of people)	○ ○ ○	✓
3	How many lollies? Get that number of lollies	? 🍭	✓
4	Share the lollies (1 for you, 1 for you, 1 for you)		✓
5	Count the number of lollies in ONE group		✓
6	Write the number of lollies in ONE group in the box	☐	✓
7	Answer the question from the story		✓

Story-Based Mathematics & Task Analysis

Torey's Goals

Task Analysis

Student: Tory _____		Task: Follow steps to complete story-based maths lesson					

Steps: ↓	Date: →	8.8	10.8	14.8	25.8	1.9	5.9	11.9
Step 7		V	NV	NV	I	NV	I	I
Step 6		NV	NV	NV	I	I	NV	I
Step 5		V	NV	NV	NV	NV	NV	I
Step 4		M	M	M	V	I	I/ EC	I
Step 3		V	V	V	NV	I	I	I
Step 2		V	V	NV	NV	NV	NV	I
Step 1		V	V	V	NV	NV	NV	NV
Number Performed Correctly Independently		**0**	**0**	**0**	**2**	**3**	**3**	**6**
Outcome		M	M	M	M	M	M	M
With Whom:		GC	GC	BJ	GC	GC	GC	GC

| Student Response Codes	Outcome	"With Whom" Codes
I – Independent NV – Nonspecific verbal prompt (tell Ss to "read the next step" OR "What's next) V – verbal prompt (read step aloud to student) M – model step P - physical EC – error correction needed	M- multiplication D – Division F - Fractions	GC –GCROFT BJ - BJIMENEZ

Jen – Classroom Teacher – 3/4 McCabe

Most to Least Intrusive Prompting & Errorless Learning
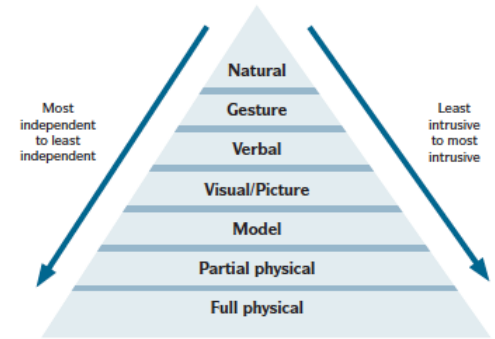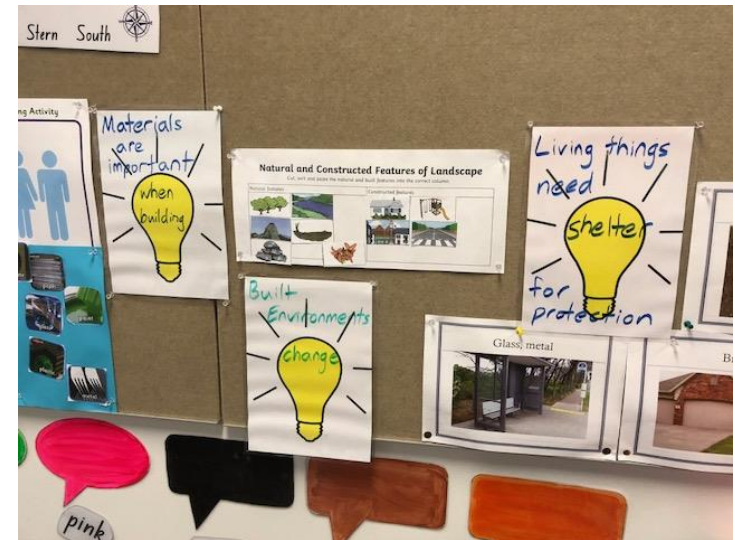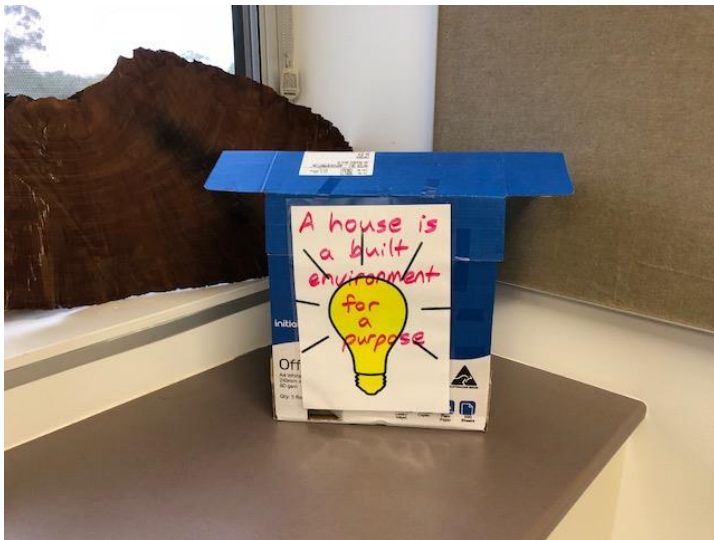

Rohan
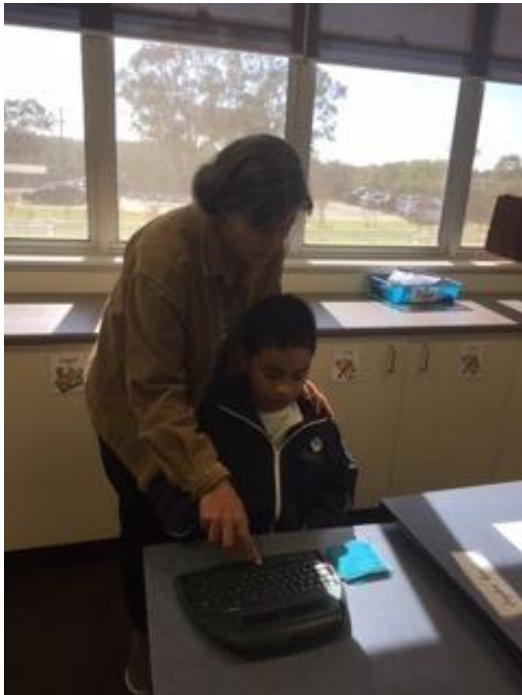
Big Ideas & Key Vocabulary

Outcome

A student:

> describes how people interact within built environments and the factors considered in their design and construction   ST2-14BE

Story-based Literature Lessons: Key Vocabulary with picture comprehension
Browder, Trela, & Jimenez (2007)

Wonder stories in Science; Key Vocabulary (object/picture match)
Browder, Trela, Courtade,, Jimenez, Knight & Flowers (2012)
Smith, Spooner, Jimenez, & Browder (2012)
Mims, Hudson, & Browder (2012)
Jimenez, Knight, & Browder (2012)
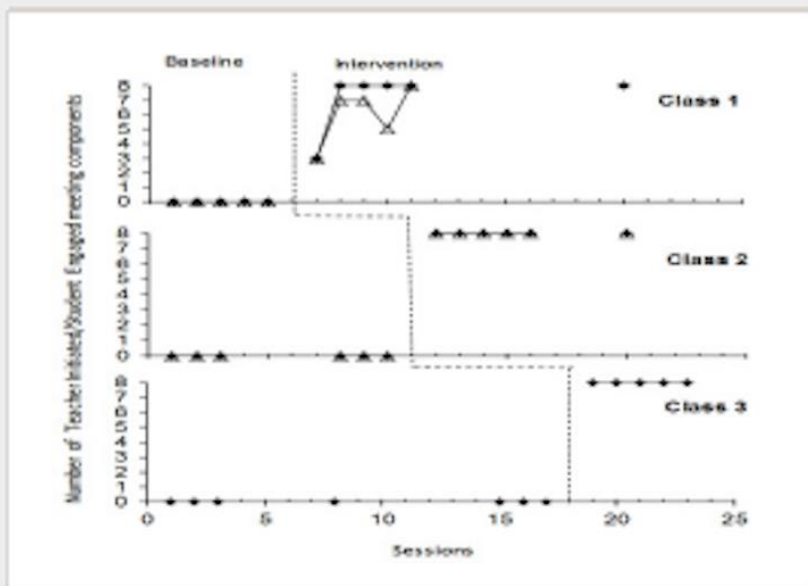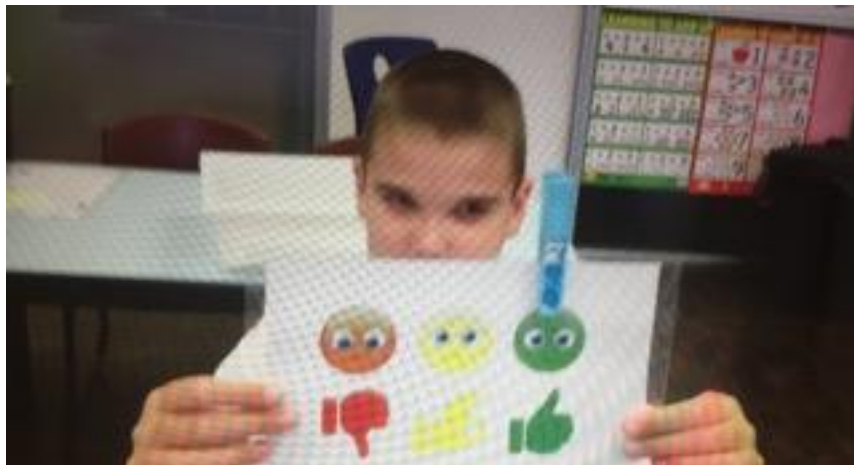
Student Empowered Formative Assessment (SEFA)
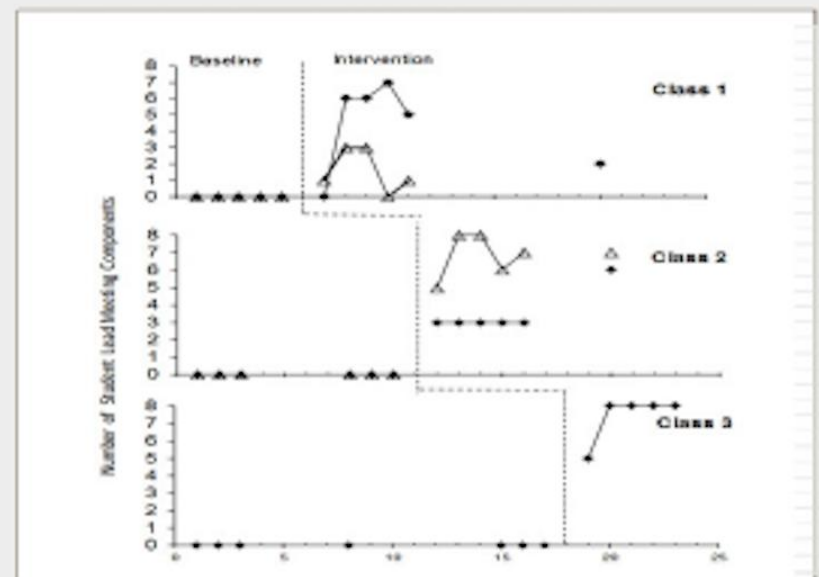

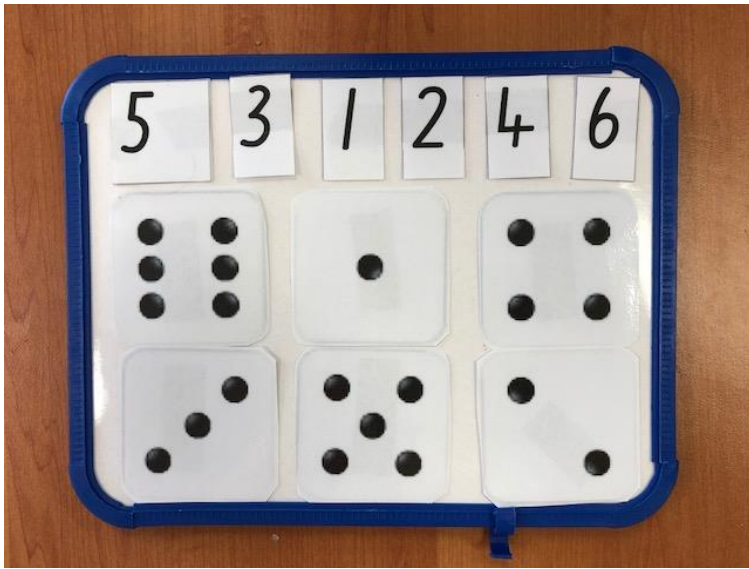Figure 1.   Student 1– ◆   Student 2– △

Figure 2.   Student 1– ◆   Student 2– △

Michelle – Classroom Teacher – K/1 Benedict
Simultaneous Prompting

William

Maria

Week 1	1	2	1	2	1	2	1	2
Term 2	in		up		a		I		my
Maria	x	✓	✓	✓	✓	✓	✓	✓
William	/		✓		✓	✓		✓	
Corrado	x		x	x	✓	✓		✓	
Nate	✓	/	✓	/	✓	/		x	✓
Tyler	✓	x	✓		✓			✓	x
Christina	DNA								
Jacob		✓	x		✓	✓		x	x
Charlotte	-	^		x	✓	✓		x	✓
Nariah	x		x	^	✓	✓		✓	x
Rosie	x		x		x	✓		x	x

* DNA = Did not assess

Charlotte: choice of 2.
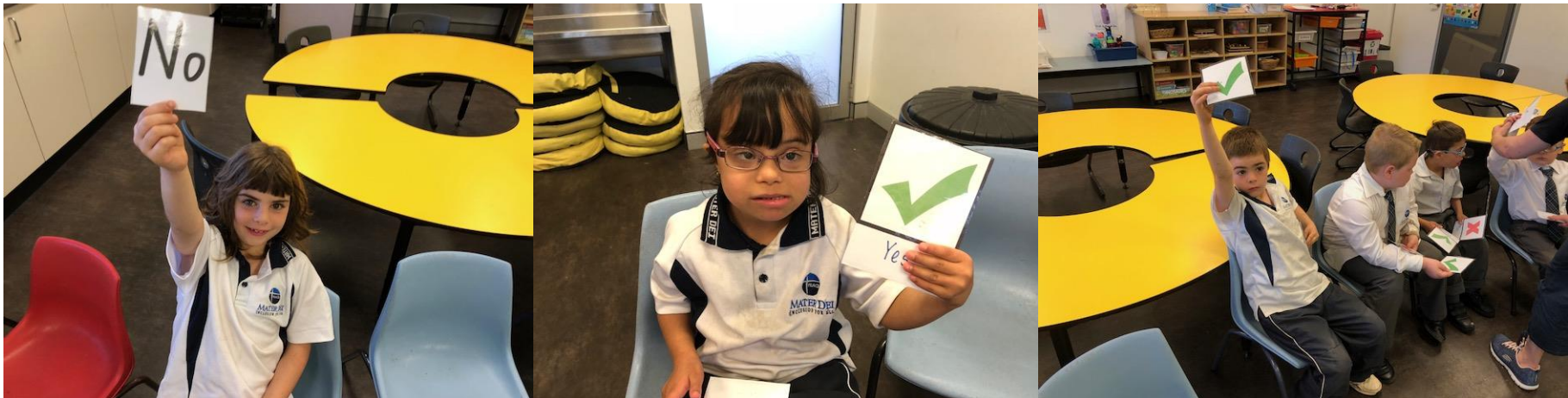Nariah

Response Cards & Response Boards

High access strategy to prompt Active Engagement and Opportunities to Respond (OTR)

Teaching Number Identification to Students with Severe Disabilities using Response Cards
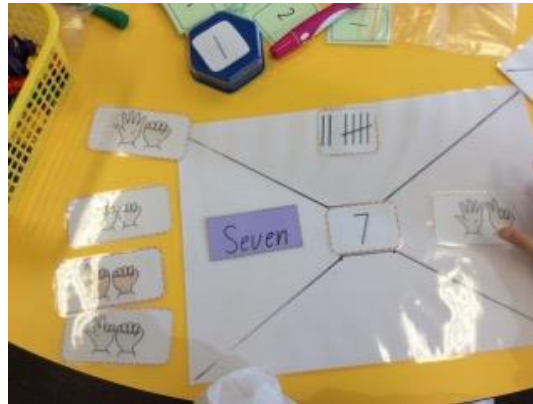Skibo, H., Mims, P. and Spooner , F. (2011)

Jacqui – Middle Leader/K Samaritan – K Samaritan

Graphic Organisers

Systematic Instruction & Graphic Organisers
 - Jimenez, B., Browder, D., & Courtade, G. (2012)
- Knight, Spooner, & Browder (2013)

Students composed written opinions by using graphic organisers and response options
- Trela (2008)

Putting the EVIDENCE-Base Together

OUTCOME:
e.g., Find points on coordinate plane

+

Real Life Application

+

Task analysis :
Points to coordinate plane, points to A, D, draws line from A to D

+

Graphic organizer; tangibles

=

Outcomes Based Lesson

Building Capacity to Sustain and Generalise

- LANGUAGE ('talk the talk')
- Modelling of use of research/journals
- PLC/Master Courses
- Self-directed learning supports
- Self-reflection on Coaching style/levels
- Research opportunities

Building Self-Directed Learning **Supports**

Research/Evidence Based Practices

Choral Responding		-where all students verbally respond, in unison, to a teacher's questions. -choral response provides every student with an opportunity to actively respond to every question posed during instruction.	https://www.youtube.com/watch?v=eKkR0EpvrcM
Response Cards		Similar to Choral Responding but with cards or white boards. Students can write on each board to answer – or may be given pre-made cards/sticks/photos to answer questions. E.g., Asked to find Volcano and students raise up a card from a choice of 3 images (mountain, valley, volcano). Increases student's opportunity to respond	http://www.theteachertoolkit.com/index.php/tool/student-response-cards https://www.youtube.com/watch?v=1tEb-q1Q5mE https://www.youtube.com/watch?v=JXZ9BUw6XFc
Task-Analysis	TA	Use to teach complex tasks by breaking them down into discrete responses or individual behaviours.	http://afirm.fpg.unc.edu/task-analysis
Forward/backward Chaining (use with a TA)		Used with a task-analysis. Backward chaining procedure, all of the behaviours in a single task are completed by the teacher except the last step. Once a student masters the last step, then the teacher would complete all steps except the last 2 steps, and so on. Forward chaining procedure, the student completes the 1st step only, and the teacher would complete all other steps. Once the student masters the 1st step, they would complete the first 2 steps, and the teacher would complete the rest, and so on.	Backward Chaining: https://www.youtube.com/watch?v=zAyE6X-12KM Forward Chaining: https://www.youtube.com/watch?v=BMAS72gvOLI (trials to add each additional student step would be over days even weeks)
Graphic Organizer	GO	- useful educational tools in any subject area. They help students organize their thoughts and ideas for answering questions, function as a pre-writing tool for essays, and provide a visual display of information. They can be an easy way to differentiate instruction for a variety of learning styles as well.	http://www.theteachertoolkit.com/index.php/tool/graphic-organizers

Mentoring/Coaching Scale

1. **Directive Control**: The coach provides strategies and techniques for the teacher to implement.
2. **Directive Informational**: The coach provides 2-3 choices of strategies and/or techniques for the teacher to implement.
3. **Collaborative**: The coach and teacher work together to select strategies and/or techniques to implement.
4. **Nondirective**: The teacher proposes strategies and/or techniques to implement and uses the coach as a backboard of potential ideas.

Rating Scale used by Coach 1x per team (4x over school year); during coaching sessions.

Results/Findings: Coaching Scale

18 Teacher Participants (2017)

	Term 1	Term 2	Term 3	Term 4
Directive Control	77%	44%	0%	0%
Directive Informational	23%	44%	44%	27%
Collaborative	0%	5%	39%	50%
NonDirectional	0%	5%	17%	23%

Additional Ventures

Research
Studies

Grant
Applications

NESA
approved PD

Conference
Presentations
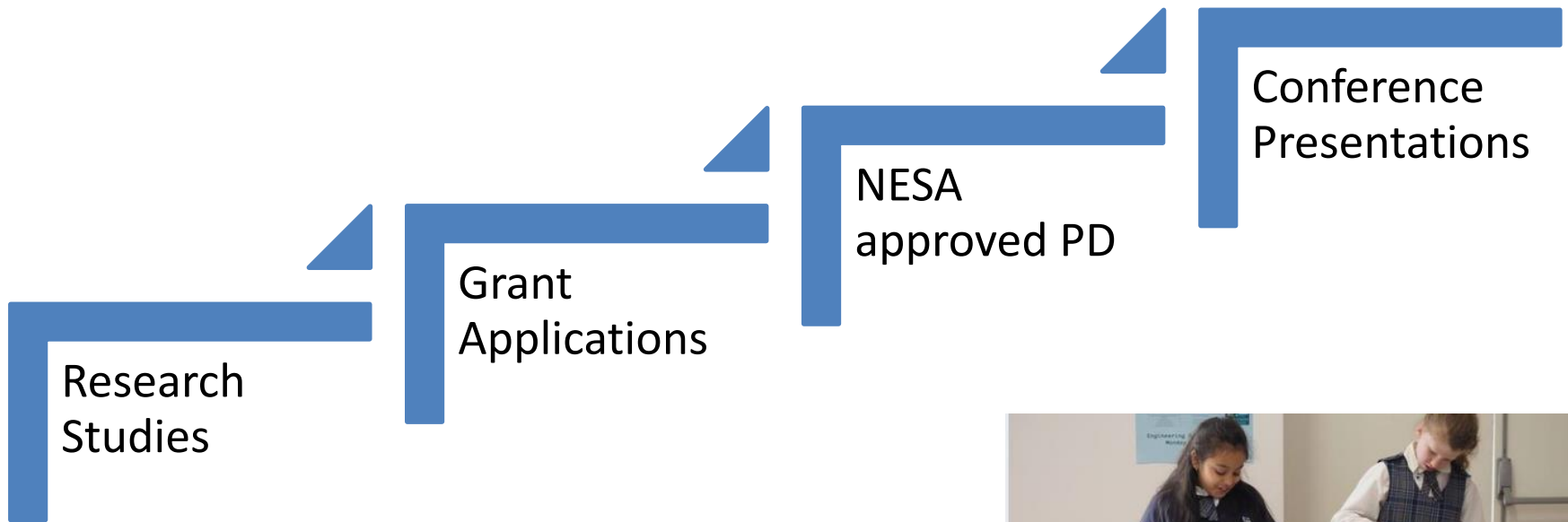
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Tweets	Following	Followers
162	93	52

Feel free to email us for more information:
breej@materdei.org.au