It's Time to Talk. An Agentic Approach to Eliciting Social Communication in Learners with Autism

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ABSTRACT

Studies support the effectiveness of evidence-based practice to improve social communication. Specific interventions must be trialled to determine their efficacy for learners with autism. Successful implementation of such evidence-based interventions relies largely on variables such as teacher expertise and the fidelity by which they adhere to intervention parameters. Careful monitoring of an individual child's progress is necessary to know whether an intervention is effective. In this article, I examine the agentic implementation of pivotal response treatment with children with autism. This article explores the empirical evidence behind pivotal response treatment. It examines potential for learners with autism while enhancing the social capital of all learners when effectively implemented in New Zealand classroom settings.

Research Paper

Key words: ASD, evidence-based practice, pivotal response training, student agency

MEET SIMON

You've seen him before. The learner that skirts the periphery of the learning space, hands behind back, hunched forward, assessing. You call his name to prompt some interaction. He turns towards you. His eyes flicker all around you with an appraising gaze, and just as quickly, he returns his attention towards the object of his fascination; you are again - forgotten, unimportant, invisible. This alert, yet aloof five-year-old has no place for social frivolities. According to those who know him best, he struggles to engage in social interaction, initiate play, manage his frustration with people or articulate his wants and needs. He has autism.

Autism Spectrum Disorder (ASD) is a neuro-developmental disability that is characterised by impairments in social communication and restricted and repetitive behaviours or interests (American Psychiatric Association, 2013, cited in Kim, 2016). Current autism estimates indicate a prevalence of 1 in 59 people according to Baio et al., (2018, cited in Autism NZ, 2020). As an educator in New Zealand, this prevalence of autism is evident. It is not uncommon to see more than one child with an autism diagnosis in a classroom. The learners that enter our classrooms, though verbal and articulate, struggle to communicate readily, and these social difficulties are one of the core impairments for learners with autism (New Zealand Autism Spectrum Disorder, 2016). Teachers often become the primary facilitator of interventions that elicit the social engagement of those with autism in their classes. pivotal response treatment is one evidence-based intervention to get students to talk.

LET'S TALK ABOUT SIMON

Simon had a rigorous transition from his early childhood education, with many school visits to build relationships with teachers and others who would be involved with his learning. Children with autism experience greater transition difficulties because of social and communication deficits (Forest et al., cited in Denkyirah & Agbeke, 2010). Although the school reflected a play-based philosophy built upon learners' interests, Simon still struggled to integrate. Simon often spent a significant amount of time pacing the outskirts of the space, hands behind back, occasionally fixating on a particular task. He would sit or venture alongside his peers, never inviting others to join his obsession or share in his very particular expertise on the topic. His knowledge was superior to all others. No one would call him to question.

At home, in stark contrast, Simon physically demonstrates his emotions, exceedingly so in fact. He adores his older sister, constantly engaging in dialogue and playing with her, even if the activity is not a shared interest. He wants to impress. He likes being at home, although not for too long, as he "... gets bored." It is apparent then, that Simon can communicate, and

does so with social intent. Perhaps the most efficient way to improve and increase communication in learners with autism is providing many opportunities for them to communicate (Koegel, Matos-Freden, Lang & Koegel, 2012). Therein lies the challenge. Creating the 'want' to initiate communication and the 'need' to reciprocate: this is where pivotal response treatment (PRT) can be used effectively.

WHAT THE EVIDENCE TELLS US: PIVOTAL RESPONSE TREATMENT

Student agency and play-based learning are at the fore of current educational practice in New Zealand classrooms. These provide significant enablers with their underlying pedagogy to notably enhance opportunities, to improve the social and communicative capabilities of learners with autism. One such evidence-based intervention that underpins these philosophies is pivotal response treatment (PRT). PRT is a naturalistic behavioural intervention based on the principles of applied behaviour analysis, which assume children's impairments can be improved with environmental manipulations such as reinforcement, consequences or extinction (Koegel, Koegel & Carter, 1999; Stahmer, Suhrheinrich, Reed Bolduc & Schreibman, 2010, as cited in Bozkus-Genc & Yucesoy-Ozkan, 2016).

This multi-component intervention has been shown to be efficacious in improving communication, play, academic skills, and social interaction (Stahmer, Suhrheinrich, Reed & Schreibman, 2012). Specific components of PRT include providing clear and appropriate cues, allowing the child to choose activities and make choices within an activity, turn-taking and interspersing maintenance tasks with acquisition tasks, which reinforce attempts to demonstrate the desired 'skill' being implemented.

Communication is interwoven across many aspects of education and development, including socialisation, behaviour, and academics (Koegel, Matos-Freden, Lang & Koegel, 2012). It is fundamental in developing and maintaining reciprocal relationships between peers. The social communication difficulty for learners with autism is marked in interactions. Such interactions as shared experiences and establishing joint-attention can often lead to difficulties with relating to peers, determining non-verbal communication strategies, emotional reciprocity and understanding play (New Zealand Autism Spectrum Disorder, 2016). It is, therefore, unsurprising that a considerable number of autism-related interventions focus on developing successful processes to improve and increase communication in children with autism. Interventions such as PRT not only result in improvements in verbalisation, length of utterance, and spontaneity of language use but may also result in decreased challenging behaviour, increase in positive affect, and higher levels of joint attention (Carr & Durand, 1985; Charlop-Christy & Trasowech, 1991; Harding, Wacker, Berg, Barretto, & Ringdahl, 2005; Koegel, O'Dell & Koegel, 1987, all cited in Koegel, Matos-Freden, Lang & Koegel, 2012).

Aligning with whānau and teacher perspectives and observations, the focus for Simon was to initiate play with his peers and maintain reciprocal conversation through play. Board games became the most influential of 'experiences' to implement PRT. This satisfied Simon's need for cognitive stimulation (a natural love of numbers, visual patterns and construction) whilst requiring the need to initiate play with his peers in a mutually engaging motivator, which also included an element of competition. With specific scripting and the phasing out of prompts, Simon developed the skill of inviting others to play a game, determining the rules through reciprocal dialogue and turn-taking.

Choice was ensured through bringing a variety of games from which he could select, Simon eventually bringing his own games from home each Friday when he knew I would be there in my role as a specialist teacher, supporting his development of positive social communication. With the agentic approach of PRT, Simon was able to have a prominent 'voice' as "... exercising one's agency in achieving valued aims, aspirations and changes in one's life and in society" (Terzi, 2014, p.487) and in Simon's case, it certainly had.

LETTING THE LEARNER LEAD: STUDENT AGENCY

Aligned with interventions connected with developing social communication in learners with autism is the motivational approach of the intervention. Student agency and pivotal response treatment work in tandem. Student agency gives voice and often choice in how students' learn (Renaissance - EdWords, 2019). This agentic approach increases motivation and is child-led, improving the chances of repeating the desired 'pivotal skill' such as initiating play or turn-taking, again through a variety of opportunities. Providing choices increases learner agency thus increasing their motivation to communicate to get desired wants and needs met through a natural 'reward'. These choices are often supported by prompts (visual, verbal, physical) that are systematically phased out, and replaced with more complex communication exchanges (Bondy & Frost,

2003; Koegel & Koegel, 2006, cited in Koegel, Matos-Freden, Lang & Koegel, 2012).

Enabling agency has a profound effect on the efficacy and fidelity of PRT. Agency comprises of several key features that improve inclusiveness for learners. Firstly, that of self-actualisation. This is understanding the student's approach to learning, which is paired with the intentionality of the teacher and classroom context to engage the learner as an active participant in decision making. This resonates with the New Zealand Curriculum that states: "Students have a sense of agency when they feel in control of things that happen around them; when they feel that they can influence events … they need to be active participants in their learning" (Ministry of Education, 2007, p.37).

IMPLEMENTING PIVOTAL RESPONSE TREATMENT: KNOWING YOUR LEARNER

To determine how to 'hook' the learner, one must observe the learner in their natural settings, David Attenborough-like, determining what the child is naturally drawn to. A preference assessment, an observation of how the learner is engaged with objects within an environment, will reveal what their interests are, as outlined in Figure 1. Aligned with this is the gathering of whānau voice to determine interests and known strengths of the learner, and listening to the voice of the learner themselves.

Next comes 'creating the antecedents'. There are no predetermined settings or materials required. Fashioning the environment and materials to provide opportunities for PRT increases the likelihood of motivation to engage in the opportunity for PRT. These materials can fall into one of three categories - play-based, individually preferred materials or enhanced academic material; in Simon's case, board games, construction, and bug searching - observation and capture. The most pivotal of all elements here is the element of choice.

Determining prompts naturally follow. What are you going to do to prompt the desired skill or

Item	Tally at 10-second intervals	Total
1. Puzzles		
2. Markers		
3. Balls	////	4
4. Potato Head™	////////////	12
5. Putty		
6. Puppet		
7. Vibrating bug		
8. Cars		
9. Book		
10. Yellow ball	////	5

Item	Preference Level	Item	Preference Level
1. Potato Head™	High	6.	Medium
2. Balls	High	7.	Low
3. Yellow ball	High	8.	Low
4.	Medium	9.	Low
5.	Medium	10.	Low

Notes: He sought out the small items in the potato head bucket that could be flapped or hit together. No functional play with the potato head.

Figure 1. Preference assessment example.
Source: Suhrheinrich, J., Chan, J., Melgarejo, M., AFIRM Team, Stahmer, A., & Reith, S. (2018).

behaviour? Will it be visual, verbal or gesture? Teachers must have a plan for the environmental design, present the opportunity, model the pivotal skill and also the response. It is important to wait for the desired response and the natural reinforcement (reward) will follow. "This relationship is key to the implementation of naturalistic interventions because when rewards are related to the task, the reinforcers for new behaviours are more readily available no matter where the skill is taught" (Suhrheinrich et al., 2018). Therein lies the opportunity for generalisation across opportunities and contexts, as due to the natural reinforcement, the desire to replicate the behaviour develops.

EXECUTING PIVOTAL RESPONSE TREATMENT: WHAT IF THEY GET IT WRONG?

You have a plan. If a learner doesn't respond appropriately, provide a prompt. A prompt may be a verbally scripted phrase as demonstrated in Figure 2, a physical gesture or a visual. This will enable them another opportunity to demonstrate their mastery of the pivotal skill. Keep responses specific to the skill being taught. At times, learner-responses may need to be scripted. This is especially so when learning how to initiate play and turn- take. An example of this is when playing a board game with two learners; one learner will need to invite the other using the script, "Would you like to play Pop the Pirate with me?" Each learner then takes a turn by stating, "Your turn ..." becoming a reciprocal model for the other, each time continuing to build the complexity and intensity of instructions to teach the skills with a mix of 50:50 mastery to acquisitional skills.

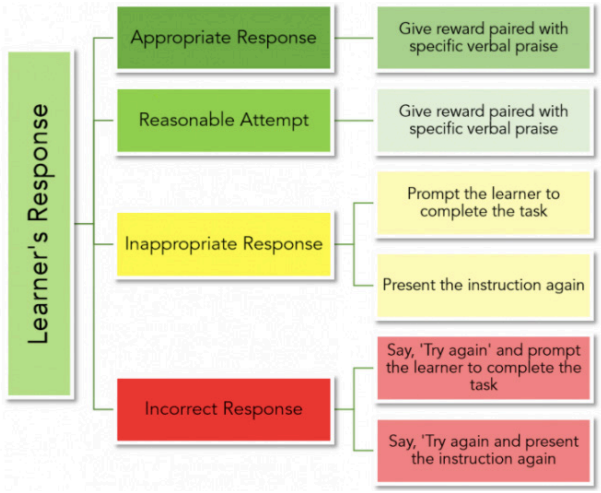

Figure 2. Feedback and prompting.
Source:. Suhrheinrich, J., Chan, J., Melgarejo, M., AFIRM Team, Stahmer, A., & Reith, S. (2018).

Prompt Level:
F - Full
P - Partial

Prompt Type:
Ph - Physical
V - Verbal
Vs - Visual
G - Gestural
I - Independent (no prompt)

Maintenance target performance:
1 - No response/maximal prompting required at all opportunities
2 - Maximal prompting required at most opportunities
3 - Most responses prompted; sporadic independent responses
4 - Some independent responses (at least 50%), some prompted responses
5 - Mostly independent responses (more than 75% of responses independent)

Target skill: Expand vocabulary.

Maintenance Targets: Colors & numbers

Acquisition Targets: Animal names

Initials	Material/Activity	Prompts		Sample Student Response/Notes	Maintenance Targets
RM	brown cow	F P	Ph V Vs (G) I	'brown cow'	1 2 3 (4) 5
RM	gray goats	F P	Ph V Vs (G) I	'3 gray goats!'	1 2 3 (4) 5
RM	red chickens	F P	Ph V Vs G (I)	'2 red chickens'	1 2 3 4 (5)
RM	white duck	F P	Ph (V) Vs G I	'white bird,' 'orange feet'	1 2 3 (4) 5
Summary		Least supportive prompt needed for response to acquisition cue:	F P Ph V Vs (G) I		1 2 3 (4) 5

Figure 3. Monitoring example.
Source: Suhrheinrich, J., Chan, J., Melgarejo, M., AFIRM Team, Stahmer, A., & Reith, S. (2018).

Monitoring is critical to ensure that the intervention is producing the desired results with increased student agency. Observe or record responses every three minutes within a ten-minute period to determine the learners level of independence or prompting required. This will then assist in informing adaptations or setting new goals (see Figure 3).

Pivotal Response Training (PRT)

AFIRM

Autism Focused Intervention Resources & Modules

---PRT Generalization Probe---

Learner's Name: ________________ Date/Time: ______________

Observer(s): ____

Target Behavior: ____

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Target Behavior Domain: ____________________________ Benchmark: ___________________________

Identify three different materials (should be learner preferred materials), settings, and teachers for the purpose of the probe.

Materials/Activity	1.	2.	3.
Setting	1.	2.	3.
Teacher	1.	2.	3.

Circle the number that corresponds with the specific materials, setting, or teacher listed above. Circle the child's response to the probed skill target as: Correct (C), Incorrect (I), or No Response (NR).

Date	Materials			Setting			Teacher			Student Response		
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
	1	2	3	1	2	3	1	2	3	C	I	NR
Total												

Summary: ____

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Adapted with permission from: Stahmer, A. C., Suhrheinrich, J., Reed, S., Schreibman, L., & Bolduc, C. (2011). *Classroom pivotal response teaching for children with autism.* Guilford Press.

For more information, visit:
www.afirm.fpg.unc.edu

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Figure 4. Generalisation probe.
Source: Suhrheinrich, J., Chan, J., Melgarejo, M., AFIRM Team, Stahmer, A., & Reith, S. (2018). *Pivotal*

A generalisation probe can determine whether learnt skills are being exhibited across settings by observing the learner across a variety of contexts within their school day or in the home. A generalisation probe checklist, as the one provided in Figure 4, is a robust way of gathering the progress made in generalising the skills.

AGENT OF CHANGE

There are two frequently cited variables to implementing interventions, "… to date there is no 'road map' identifying or matching a specific student characteristics to specific interventions" (Landa, 2007; Ogletree, 2007, as cited in Koegel et al., 2012). Secondly, time-poor teachers often choose interventions based on ease of implementation, personal beliefs and pedagogy, perceived appropriateness of the intervention, and the availability of materials and support staff (Boardman et al., 2005, cited in Koegel et al., 2012). These variables elicit potential barriers to implementation, and when working alongside a student like Simon, it is necessary to acknowledge how my own pedagogy, practice and access to people resources altered the implementation of pivotal response treatment. With Simon having a teacher-aide involved in the observations and an ability to continually maximise the learning opportunities to implement PRT based on Simon's lead was advantageous. Feldman and Matos (2013, cited in Kim, 2016) demonstrated that paraprofessionals successfully learned to utilise PRT-based social facilitation procedures by receiving effective training in inclusive school settings. In addition, children with autism significantly improved their reciprocal social engagement with peers and showed consistent interaction. Providing PRT training for paraprofessionals, therefore, not only developed their skills but also increased social interaction behaviours between children with autism and their peers in school settings. It was also a way of ensuring that the intervention was implemented with fidelity.

IN SIMON-SPEAK

"I feel shy because there are people everywhere, all day," Simon says, as I tap into his feelings about school, people, and himself. The inability to form and maintain meaningful social relationships is perhaps the most detrimental and ubiquitous characteristic of autism (Kanner, 1943; Rogers, 2000, cited in Koegel, Matos-Freden, Lang & Koegel, 2012). The most common social deficits evident in learners with autism include initiating and sustaining interactions, identifying and interpreting emotions, and perspective-taking.

"I get bored because I have no one to play with," was Simon's perspective upon first engaging in conversation. This took months to elicit. Careful construction of a relationship fashioned with exposure to one another in his natural habitat, meticulous observation, and gentle introduction of preferential experiences and activities delivered us to this point.

Six months later, Simon states: " I am happy playing games because I have somebody to play with." What was most obvious throughout the monitoring process was his independence in initiating and engaging in social play with his peers, formulating long-standing friendships and requiring no prompts. Simon is the winner now, every time. It is his time to talk.

WHĀNAU VOICE

"He is flourishing. It is in the way he is communicating, more functional, pleasant, asking us for help and vocalising any issues or problems", according to his mother. It became evident that, in six months, Simon is generalising his mastered skills - both at home and at school.

It is well-documented that if the intervention is coordinated with parent education, a substantial portion of the child's day can be covered with intervention in the natural environment (Koegel, Matos-Freden, Lang & Koegel, 2012). Through transparent conversations, professional sharing of information and modelling through photo and video snapshots posted to Simon's Seesaw digital journal platform, enabled PRT to be utilised in the home. The teaching of skills themselves will be seldom effective if the generalisation is not actively addressed" (New Zealand Autism Spectrum Disorder, 2016. p.104). His mother said that Simon had, "... increased motivation and engagement. He is compliant, and there is more open communication … he will talk about school now." This evidence alone is enough to determine PRT as being an enabler in opening up the 'talking world' for learners with autism. More importantly, the learning and generalisation stemmed from the learner's choice of activities, making it most meaningful and relevant.

IN SUMMARY

In summary, research findings indicate that a significant number of studies, over 40 according to Research Autism (2017), demonstrate that PRT is an effective intervention for children with autism to improve their language use, communication, and social interactions in school settings. PRT

successfully leads to maintenance and transfer for students' learning across contexts. The experience of Simon validates this success and demonstrates the potential of normalising the implementation of such interventions in our New Zealand classrooms.

However, implementing evidence-based interventions for children with autism into school settings can be challenging for teachers because these practices may require significant training and resources that are not readily available in many school settings. The Autism Focused Intervention Resources & Modules (AFIRM) is an extension of the National Professional Development Center (NPDC) on autism, who offer free online professional learning and training that can add rigour to implementing evidence-based interventions. Engaging in such professional development opportunities will enable the implementation of robust interventions in classrooms, thus bridging the research-to-practice gap. When more practitioners share their practice, as I have done mine, we can gather a body of Aotearoa New Zealand literature to add to existing international studies.

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