Profoundly Autistic Children who Understand More than they Can Say: Expressive Language Deficit in the Context of Oral Motor Impairment

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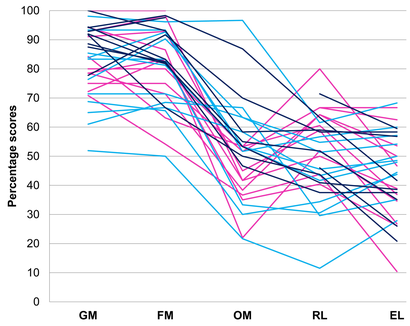
BACKGROUND

¼ of people with autism speak few or no words.

Of these, ¼ to 1/3 have significantly more intact receptive language [1, 2], and impaired oral motor skills [1]:



This output-impaired subgroup needs different treatments than those with core impairments in language or auditory processing!

Point OutWords [3] is an iPad intervention targeting fine motor and lexical skills.

REFERENCES

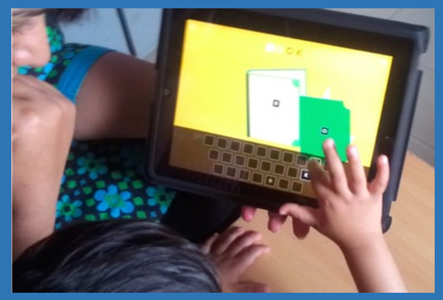
1. Belmonte et al., *Frontiers in Integrative Neuroscience* 7:47 (2013)

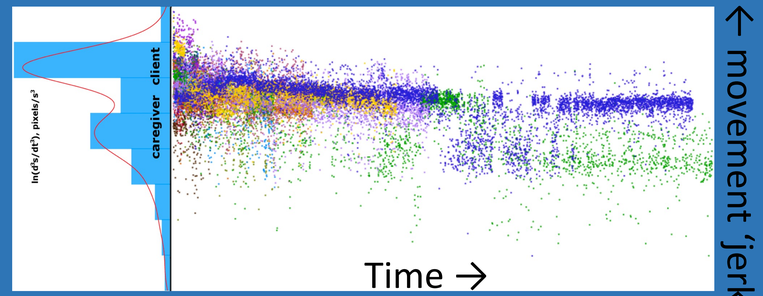
2. Chen, Siles, & Tager-Flusberg, *Autism Research* 17:2:381-394 (2024)

3. Weisblatt et al., *IJHCI* 35:8:643-665 (2019)

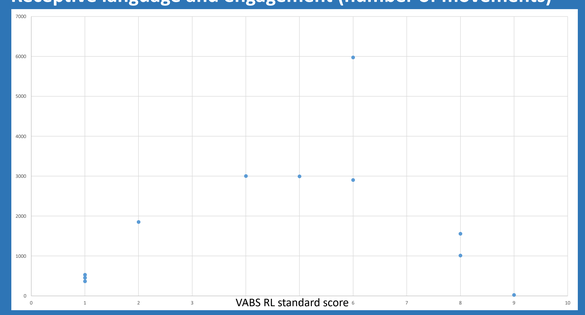
4. McKinney et al., *Trials* 21:109 (2020)

Structured parent reports (Vineland) but not clinical observations (Mullen) of receptive language ability and receptive-expressive language disparity predict profoundly autistic children's engagement with a touchscreen keyboard.

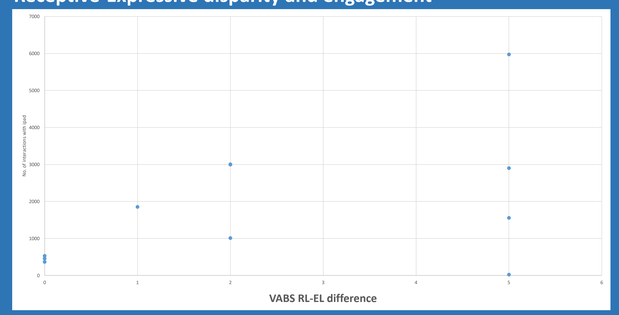




Receptive language and engagement (number of movements)



Receptive-Expressive disparity and engagement



METHODS

13 children from the experimental group of a separately reported randomised controlled trial [4].

Communication, motor, oromotor, & daily living skills (Vineland, Mullen, VMPAC) tested at baseline.

Number of distinct touchscreen interactions indexed engagement.

'Jerk' (change in acceleration) of each interaction plotted in sequence. (Users' own movements separated from caregivers' models by Gaussian mixture modelling.)

FINDINGS

Engagement predicted by Vineland receptive language ($F_{1,7}$=11.67, p=0.0112) and receptive-expressive disparity ($F_{1,7}$=5.94, p=0.045) jointly.

All users decreased jerk; those who engaged most showed the most change.

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