Teaching First Words: A case example of two toddlers with autism

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SOUTHWEST AUTISM RESEARCH AND RESOURCE CENTER

SARRC community SCHOOL

SARRC Community School

- Comprehensive Inclusive Preschool
  - 20 hours of ABA-based treatment in the classroom with typically developing peers
    - Six children with a diagnosis of autism and between 6-10 typically developing children in each classroom
  - 2.5 hours of Parent Training
  - Between 5 and 17.5 hours of 1:1*


ASK
AGAIN
LATER

But what does the research say?

Behavior Predictors of Language Development Over 2 Years in Children With Autism

Journal of Consulting and Clinical Psychology
2005, Vol. 73, No. 3, 525–538

Karen D. Bopp
Pat Mirenda
Bruno D. Zumbo
The University of British Columbia,
Vancouver, Canada

Individual Behavioral

Differential responsiver
approach for all childr
participant characteristi
gation, an analysis of
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study, these profiles w

J Autism Dev Disord (2006) 36:993–1005
DOI 10.1007/s10803-006-0137-7

ORIGINAL PAPER

Early Predictors of Communication Development in Young Children with Autism Spectrum Disorder: Joint Attention, Imitation, and Toy Play

Karen Toth · Jeffrey Munson · Andrew N. Meltzoff · Geraldine Dawson

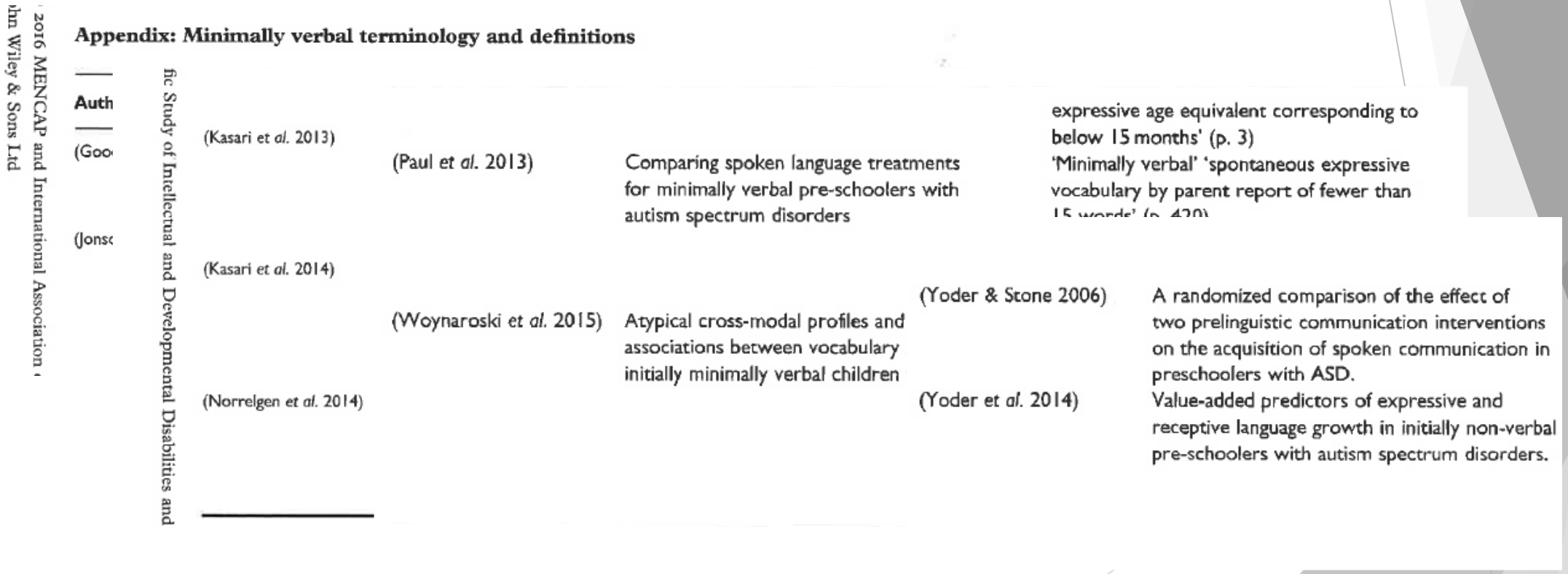
Published online: 15 July 2006

Abstract This study investigated the unique contributions of joint attention, imitation, and toy play to language ability and rate of development of communication skills in young children with autism spectrum disorder (ASD). Sixty preschool-aged children with ASD were assessed using measures of joint attention, imitation, toy play, language, and communication ability. Two skills, initiating

1978; Nordin & Gillberg, 1998; Sigman & Norman, 1999). In a recent study that followed children with autism from age 2 to 9, as many as 40% were found to have good outcomes based on language and cognitive scores (Stone, Turner, Pozdol, & Smoski, 2003). One of the strongest predictors of positive long-term outcomes for children with autism is the acquisition of spoken language (Bartak, Rutter,

The statistics

- 10%-30% of individuals with autism are MV (Anderson et al., 2007; Lord, Risi, & Pickles, 2004; Wodka, Mathy, & Kalb, 2013)
  - Minimally verbal: independently using between 5-20 functional words based on naturalistic language samples/parent reports (Rose, Trembath, Keen, & Paytner, 2016).



Appendix: Minimally verbal terminology and definitions

Auth			
(Goo			expressive age equivalent corresponding to below 15 months' (p. 3)
(Kasari et al. 2013)	(Paul et al. 2013)	Comparing spoken language treatments for minimally verbal pre-schoolers with autism spectrum disorders	'Minimally verbal' 'spontaneous expressive vocabulary by parent report of fewer than 15 words' (p. 420)
(Jonsc			
(Kasari et al. 2014)			(Yoder & Stone 2006) A randomized comparison of the effect of two prelinguistic communication interventions on the acquisition of spoken communication in preschoolers with ASD.
	(Woynaroski et al. 2015)	Atypical cross-modal profiles and associations between vocabulary initially minimally verbal children	
(Norrelgen et al. 2014)			(Yoder et al. 2014) Value-added predictors of expressive and receptive language growth in initially non-verbal pre-schoolers with autism spectrum disorders.

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fic Study of Intellectual and Developmental Disabilities and

extra value **meals**

include medium fries and soft drink

large fries and soft drink +.
add 120-230 Cal.

A **2,000 calorie daily diet** is used as the basis for general nutrition advice; however, individual calorie needs may vary. Additional nutritional information available upon request.

1 Big Mac®

0.00 — 550 Cal.
0.00 meal — 930-1170 Cal.

2 Quarter Pounder®* with cheese

*Weight before cooking 4 oz. (113.4 gms).

0.00 — 520 Cal.
0.00 meal — 900-1140 Cal.

3 Double Quarter Pounder®* with cheese

*Weight before cooking 8 oz. (226.8 gms).

0.00 — 750 Cal.
0.00 meal — 1130-1370 Cal.

8 Southern Style Chicken

0.00 — 420 Cal.
0.00 meal — 800-1040 Cal.

9 Chicken Selects®

0.00 — 380 Cal.
0.00 meal — sauces 30-110 Cal. — 760-1000 Cal.

10 10 Pc. Chicken McNuggets®

0.00 — 470 Cal.
0.00 meal — sauces 30-110 Cal. — 850-1090 Cal.

Teaching first words to our participants: Evie and Junior

- Evie
  - Treatment: January 2016 - Current
  - Intervention dates: January 2016 – June 2016
  - 2 years, 11 months
  - Strengths
  - Challenges
- Junior
  - Treatment: August 2014 - Current
  - Intervention dates: November 2014 – April 2015
  - 2 years, 3 months
  - Strengths
  - Challenges

Rationale

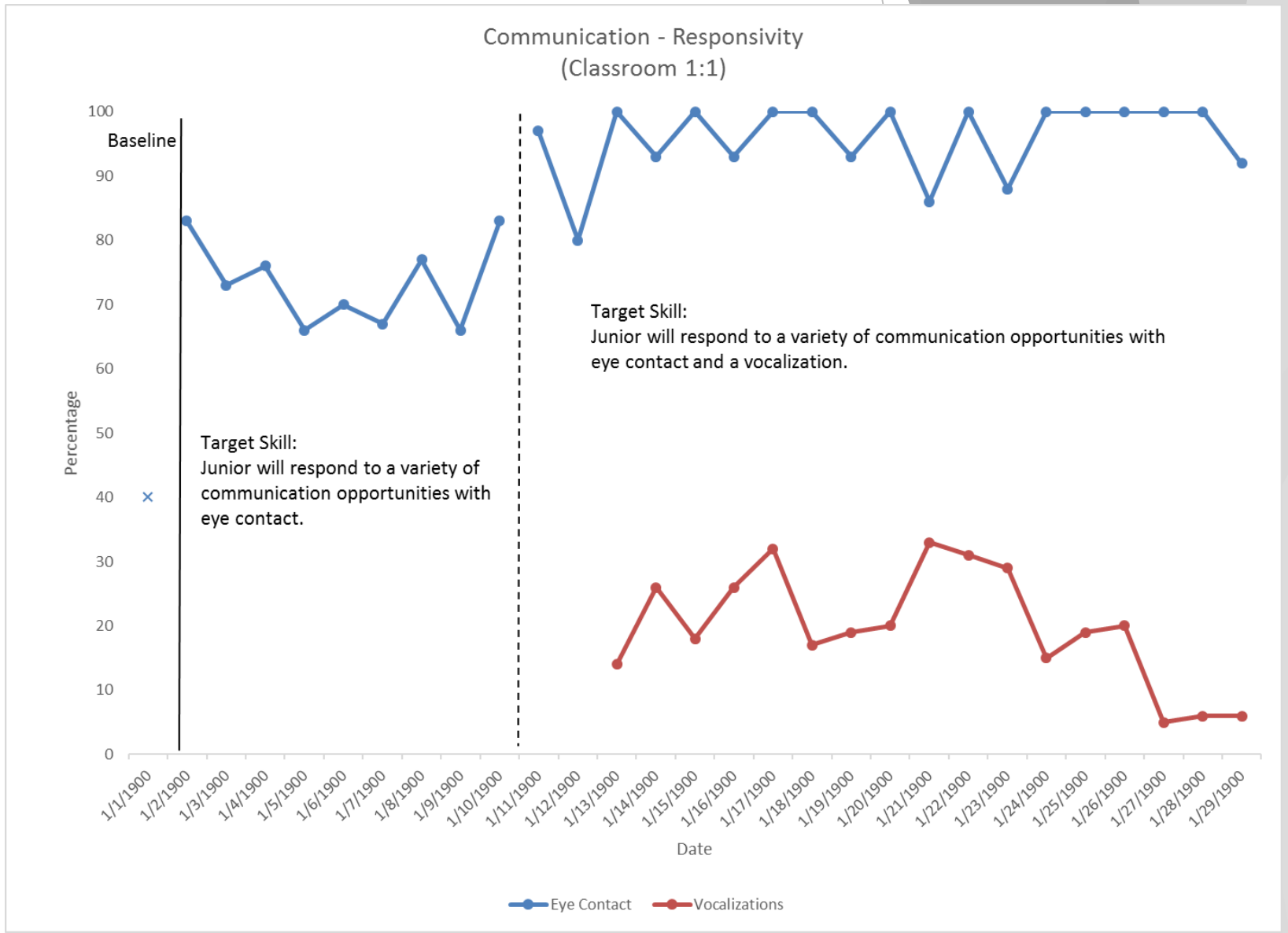
Intensity of problem behaviors led to isolation from peers and a decrease in learning opportunities.

Caregivers and clinicians found it extremely difficult, time consuming, and stressful to determine what their child desired throughout the day.

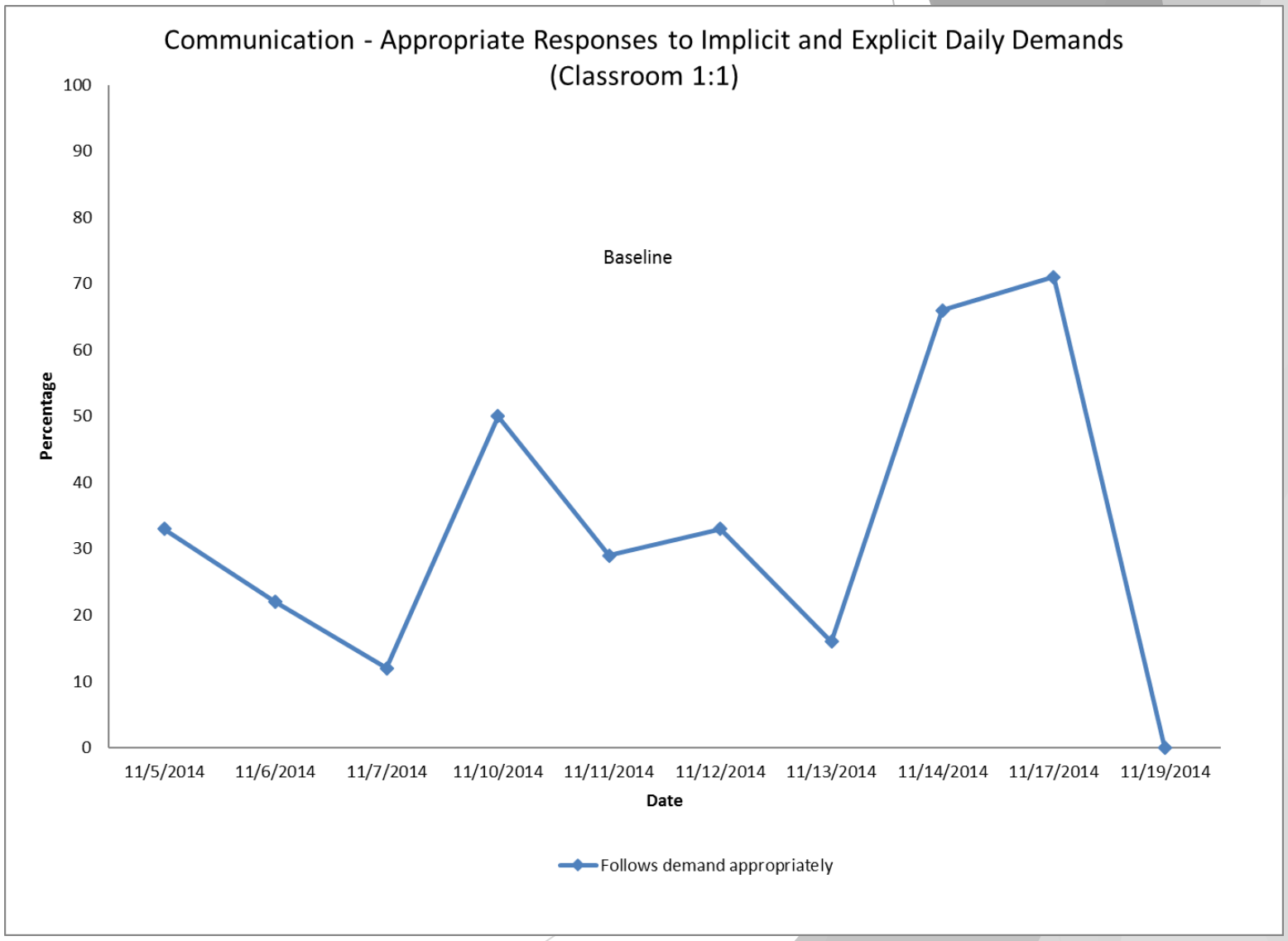
Engaging in appropriate social-communicative behaviors results in a safe environment for peers, parents, and siblings.

Using spoken language to get wants and needs met is ideal for an increased quality of life. Appropriate, functional communication skills result in gaining access to desired items/activities effectively and efficiently.

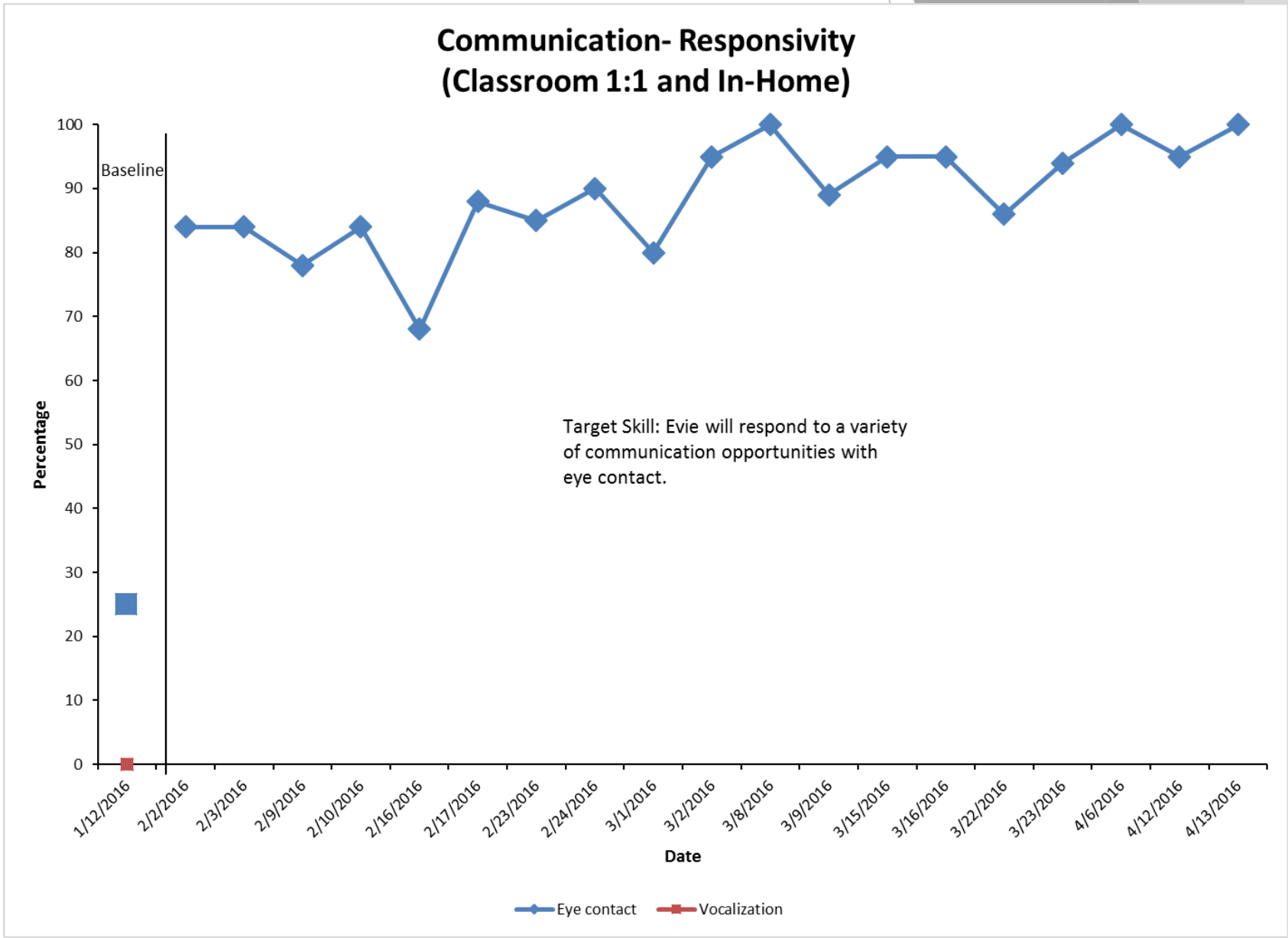
Junior Baseline Communication Data



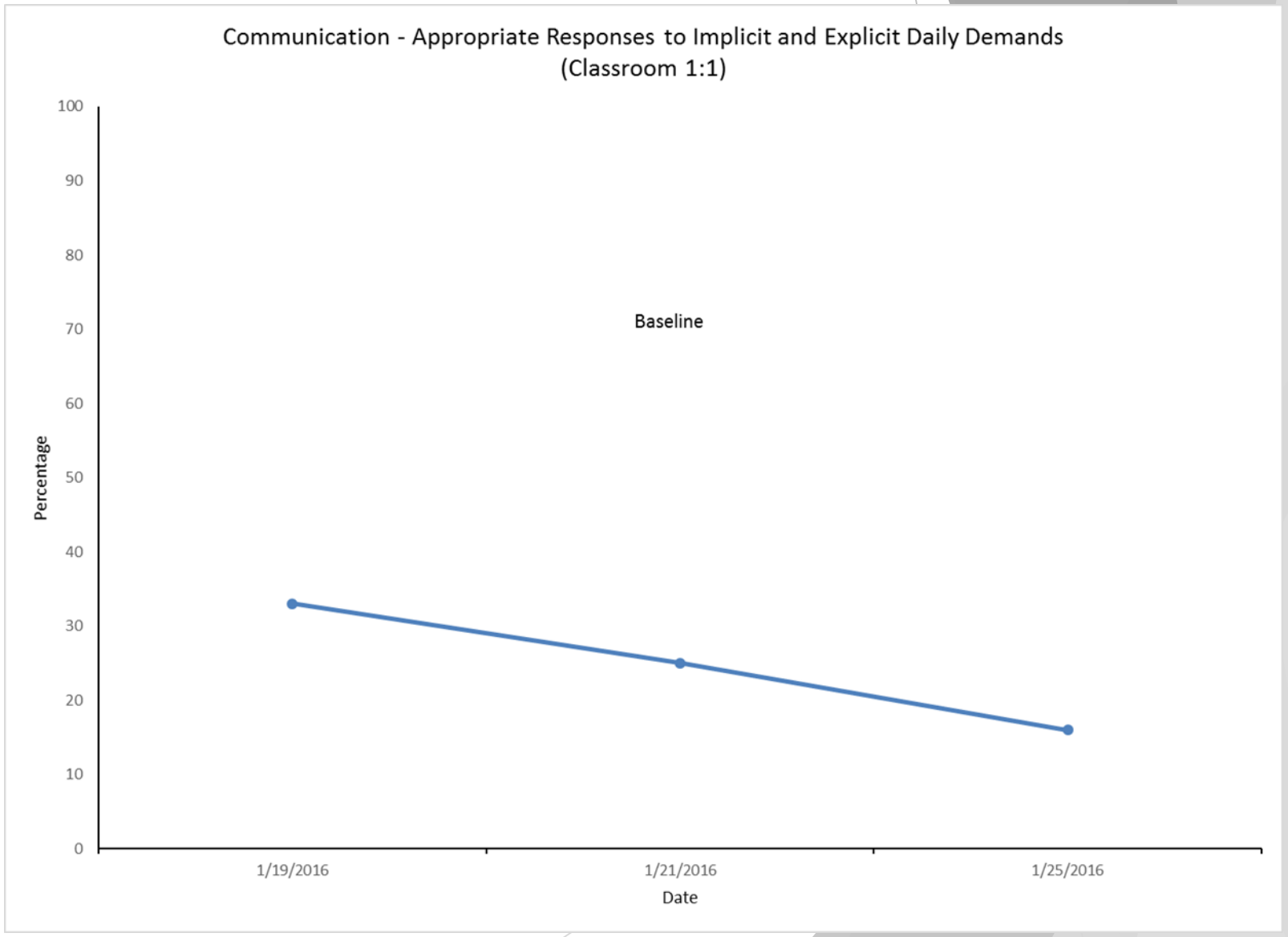
Junior Baseline Data Cont.



Evie Baseline Communication Data



Evie Baseline Data Cont.



‘No’ card Intervention

- Goal
  - Participants will use appropriate communication in the form of an exchange with a 2-D picture card to escape/avoid daily demands, individuals, and undesired items/activities.

‘No’ card Intervention

- Measurement
  - Repeated A-B design
  - Baseline data were collected on each participants ability to respond appropriately to implicit and explicit demands.
  - Baseline data were also collected on each participants ability to respond to various communication opportunities that required non-verbal and verbal output.

‘No’ card Intervention

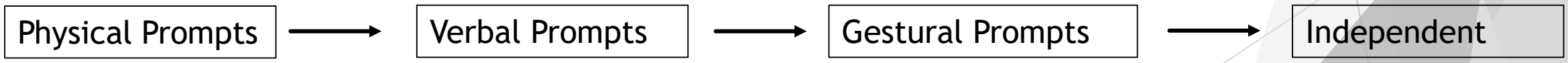
- Measurement cont.
  - The dependent variables were the percent of opportunities in which the participant appropriately exchanged the ‘No’ card and the percent of opportunities in which they appropriately responded to the implicit and explicit demands.
  - Also included the percent of opportunities in which the participant appropriately responded to a variety of communication opportunities.

‘No’ card Intervention

- Operational Definitions
  - Appropriate exchange:
    - The participant will hand the communication partner the 2-D picture card with an absence of problem behavior.
  - Appropriate response to implicit/explicit demands:
    - Follows with the demand within 3-5 seconds with an absence of problem behavior.

‘No’ Card Intervention

- Procedure
  - Teaching phases: participants were allowed to exchange 2-D picture cards located on a clinician bracelet an unlimited number of opportunities while prompt levels were systematically faded to teach independent functional communication.
    - Independent functional communication was defined as exchanging the card.
    - Non-negotiable demands*



‘No’ Card Intervention

‘No’ Card Intervention

Verbal prompt

Physical prompt

Independent Exchange

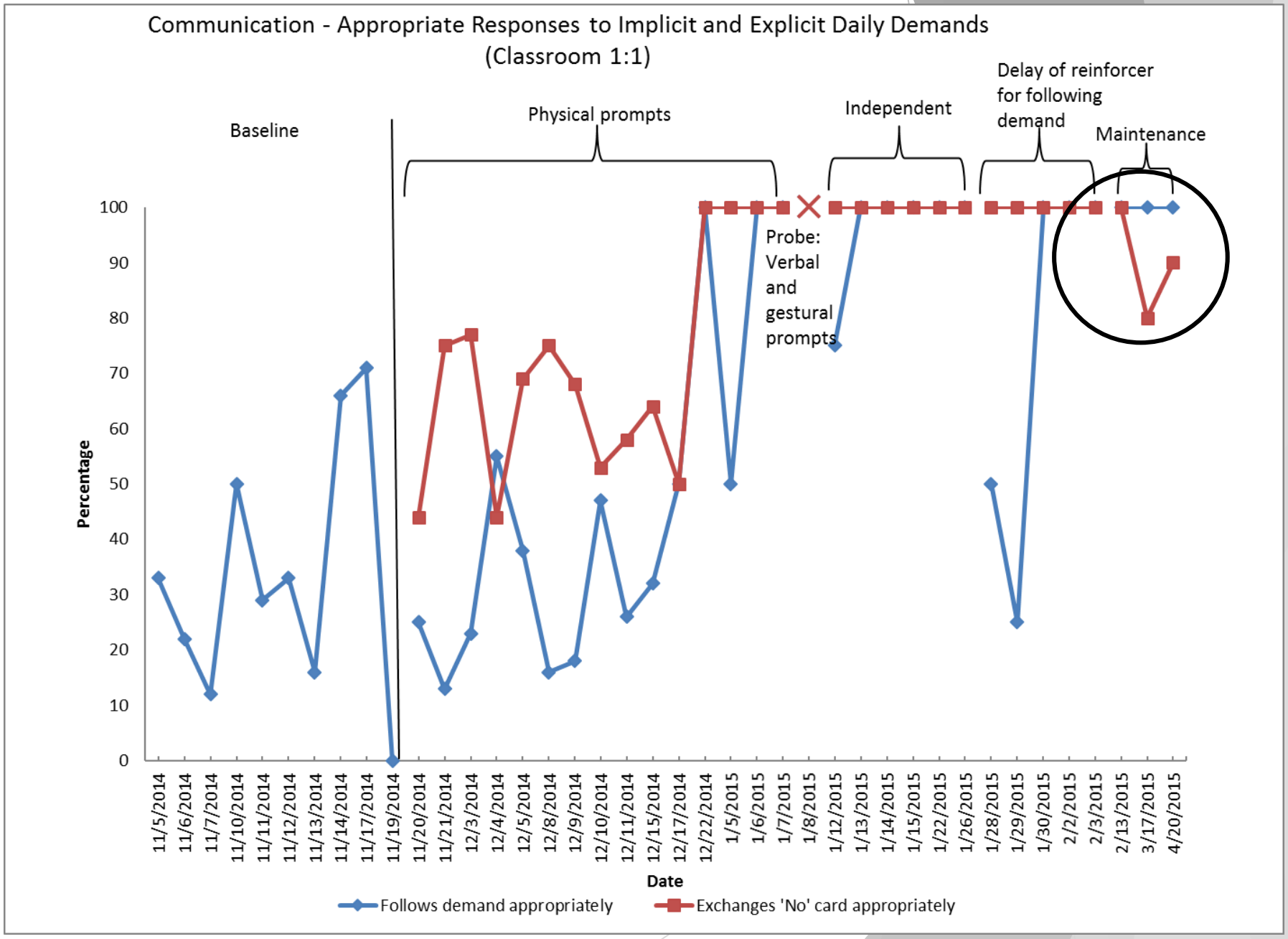
‘No’ Card Intervention

- Procedure
  - Reinforcement schedule: Once participants were proficient with the exchange, a concurrent schedule of reinforcement was included for appropriate responding to the implicit/explicit demands.

Here's what we found:

- Participants were able to not only meet mastery of the 'No' card intervention, but they were able to transition from a non-verbal exchange of the 'No' card to a verbal ("No") exchange of the 'No' card.
- Participants increased their ability to follow daily implicit/explicit demands.

Data - Junior


Communication - Appropriate Responses to Implicit and Explicit Daily Demands
(Classroom 1:1)
Baseline
Physical prompts
Independent
Delay of reinforcer for following demand
Maintenance
Probe: Verbal and gestural prompts
Percentage
100
90
80
70
60
50
40
30
20
10
0
11/5/2014
11/6/2014
11/7/2014
11/10/2014
11/11/2014
11/12/2014
11/13/2014
11/14/2014
11/17/2014
11/19/2014
11/20/2014
11/21/2014
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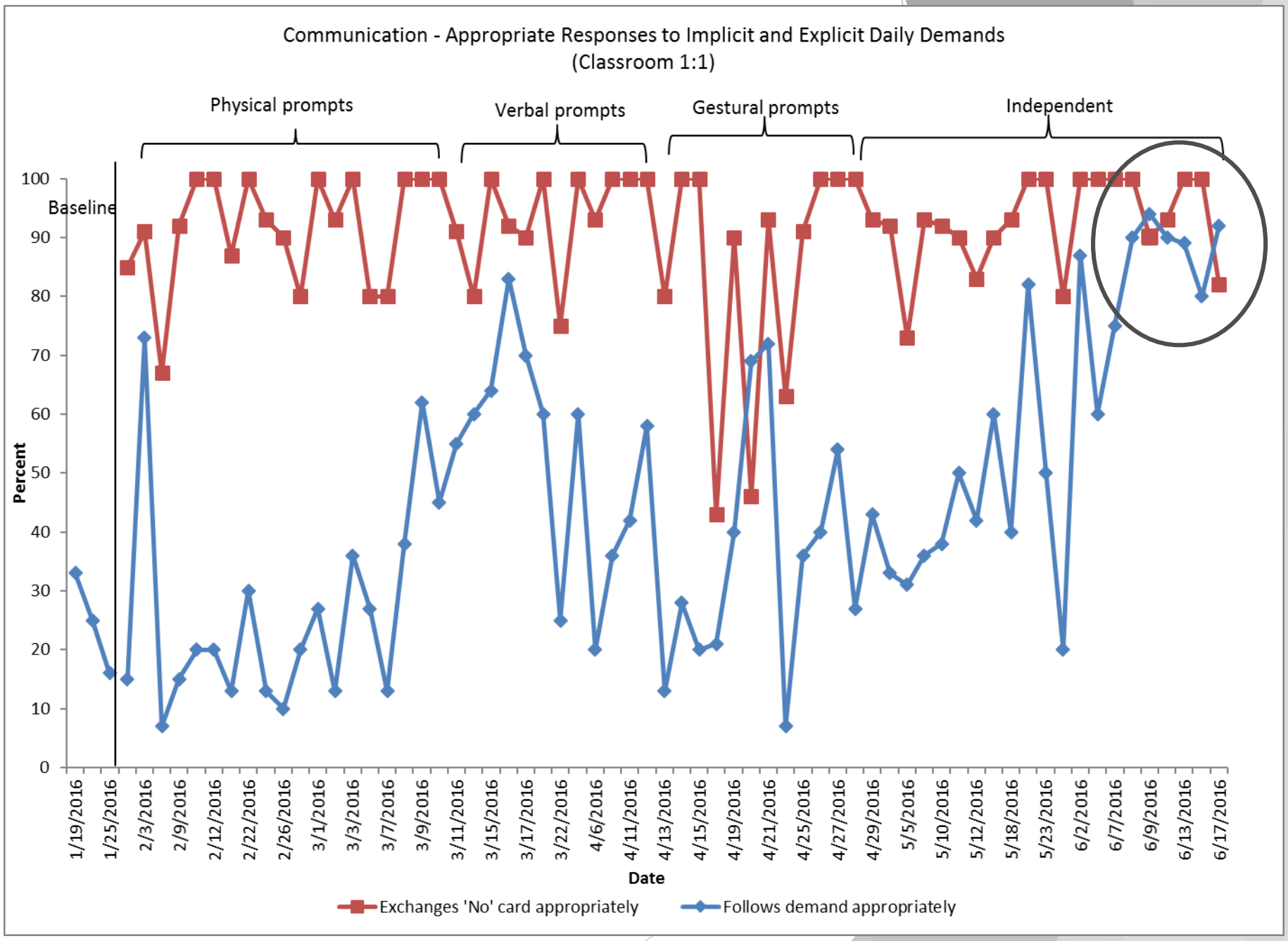
1/6/2015
1/7/2015
1/8/2015
1/12/2015
1/13/2015
1/14/2015
1/15/2015
1/22/2015
1/26/2015
1/28/2015
1/29/2015
1/30/2015
2/2/2015
2/3/2015
2/13/2015
3/17/2015
4/20/2015
Date
Follows demand appropriately
Exchanges 'No' card appropriately

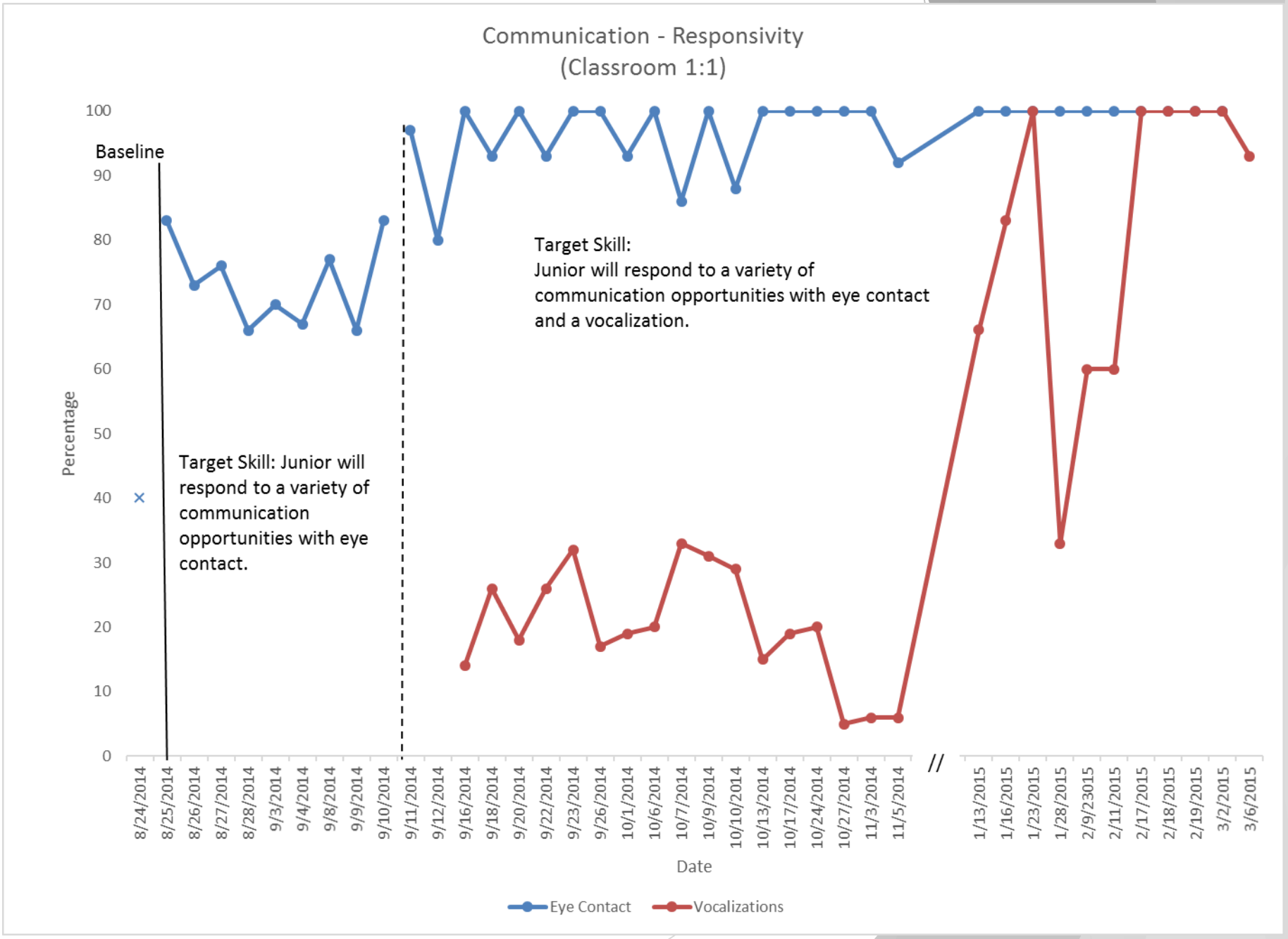
Data - Evie


Communication - Appropriate Responses to Implicit and Explicit Daily Demands
(Classroom 1:1)
Physical prompts
Verbal prompts
Gestural prompts
Independent
Baseline
Percent
100
90
80
70
60
50
40
30
20
10
0
1/19/2016
1/25/2016
2/3/2016
2/9/2016
2/12/2016
2/22/2016
2/26/2016
3/1/2016
3/3/2016
3/7/2016
3/9/2016
3/11/2016
3/15/2016
3/17/2016
3/22/2016
4/6/2016
4/11/2016
4/13/2016
4/15/2016
4/19/2016
4/21/2016
4/25/2016
4/27/2016
4/29/2016
5/5/2016
5/10/2016
5/12/2016
5/18/2016
5/23/2016
6/2/2016
6/7/2016
6/9/2016
6/13/2016
6/17/2016
Date
Exchanges 'No' card appropriately
Follows demand appropriately

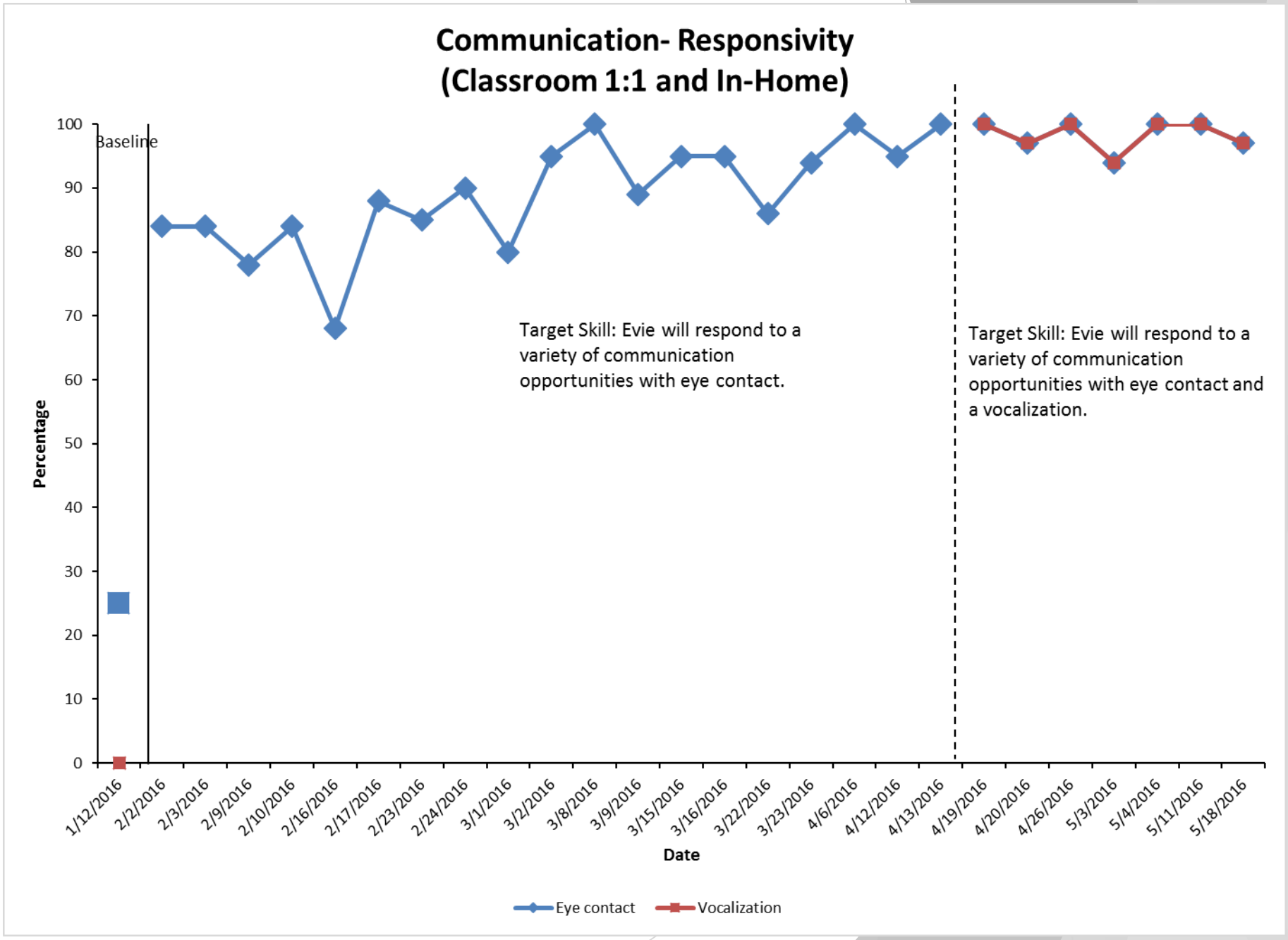
We also found…

- After each participant became proficient in the exchange, their ability to respond to a variety of communication opportunities with spoken language increased significantly.

Data - Junior


Communication - Responsivity
(Classroom 1:1)
Baseline
Target Skill: Junior will respond to a variety of communication opportunities with eye contact.
Target Skill:
Junior will respond to a variety of communication opportunities with eye contact and a vocalization.
Percentage
Date
Eye Contact
Vocalizations

Data - Evie


Communication- Responsivity
(Classroom 1:1 and In-Home)
Baseline
Target Skill: Evie will respond to a variety of communication opportunities with eye contact.
Target Skill: Evie will respond to a variety of communication opportunities with eye contact and a vocalization.
Percentage
100
90
80
70
60
50
40
30
20
10
0
1/12/2016
2/2/2016
2/3/2016
2/9/2016
2/10/2016
2/16/2016
2/17/2016
2/23/2016
2/24/2016
3/1/2016
3/2/2016
3/8/2016
3/9/2016
3/15/2016
3/16/2016
3/22/2016
3/23/2016
4/6/2016
4/12/2016
4/13/2016
4/19/2016
4/20/2016
4/26/2016
5/3/2016
5/4/2016
5/11/2016
5/18/2016
Date
Eye contact
Vocalization

Limitations

- Formalized preference assessments not conducted
- Was not conducted with participants who engaged in severe aggressive behavior
- Did allow participants to escape majority of daily demands during teaching phases

Future Directions

- Complete fading of ‘No’ cards
- Including a social measure
- Intervention fits a particular profile of autism

References

- Bopp, K., Mirenda, P., and Zumbo, B. (2009). Behavior predictors of language development over 2 years in children with autism spectrum disorders. *Journal of Speech, Hearing, and Language Research, 52,* 1106-1120.
- Mirenda, P. (2016). Using AAC to support minimally verbal students with ASD.
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Thank you!

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