Evoking Conversational Phrases with Textual Scripts

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Introduction

Social communication deficiencies are commonly associated with autism spectrum disorder (ASD) (DSM-5; American Psychiatric Association, 2013). Over time these deficits persist and may become more pronounced without intervention (Krasny et al, 2003). Generalisation and maintenance of new conversation skills requires transfer stimulus control from prompts to naturally occurring stimuli (Odom et al, 1985).

Conversational scripts have been used to transfer stimulus control from teachers to portable scripts that can promote independent conversational engagement (Grosberg & Charlop 2017; Hughes et al., 2000, 2011; Krantz & McClannahan 1993, 1998; Sarokoff, Taylor & Poulson 2001; Thiemann & Goldstein, 2001). Scripts may include sentences for making initiations and introductions, asking questions and reciprocating. This investigation aimed to contribute to the literature by adapting previously established conversational script methods to meet the learning requirements of the participant.

Table 1.
Perceived Conversation Quality Questionnaire

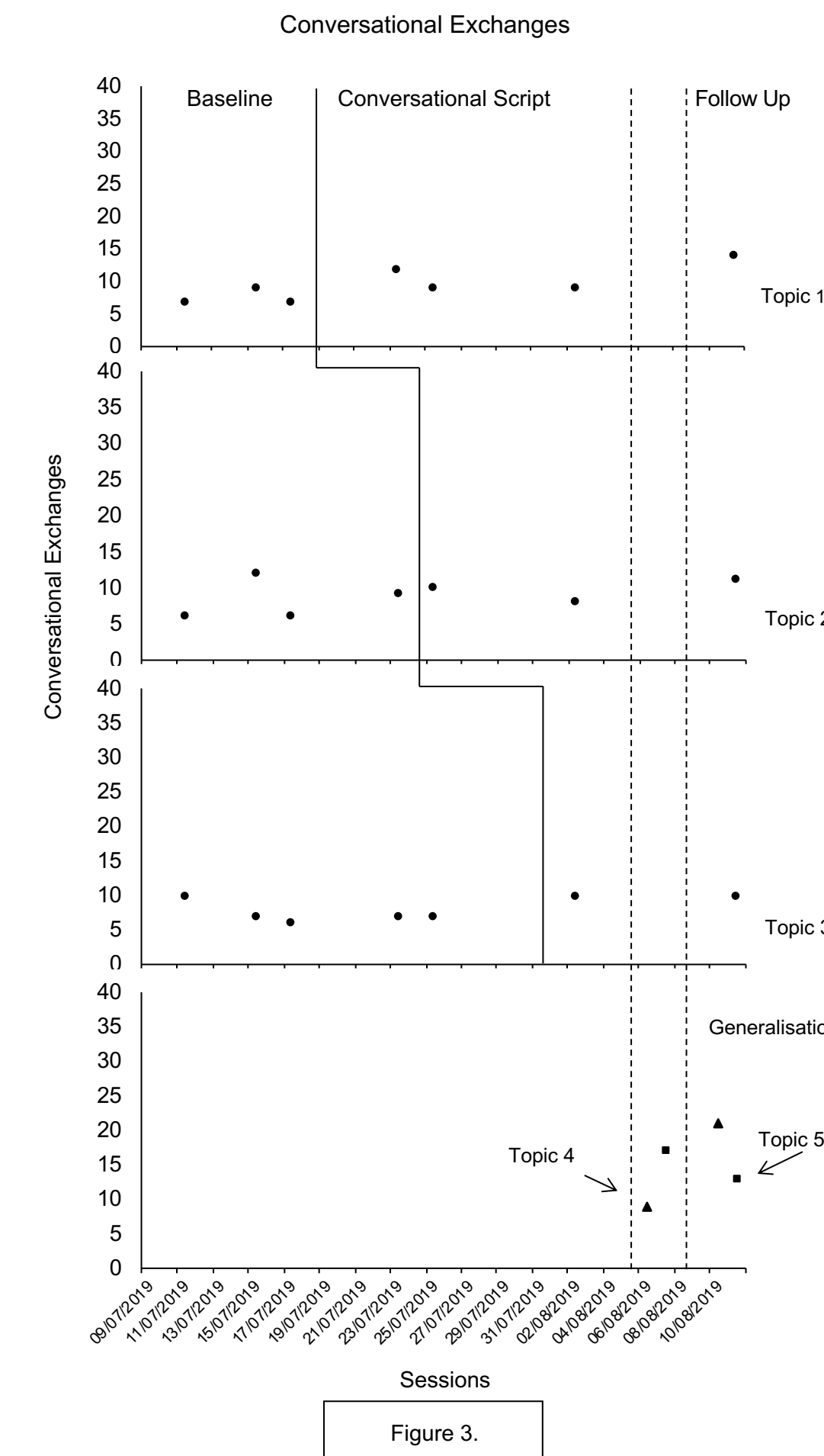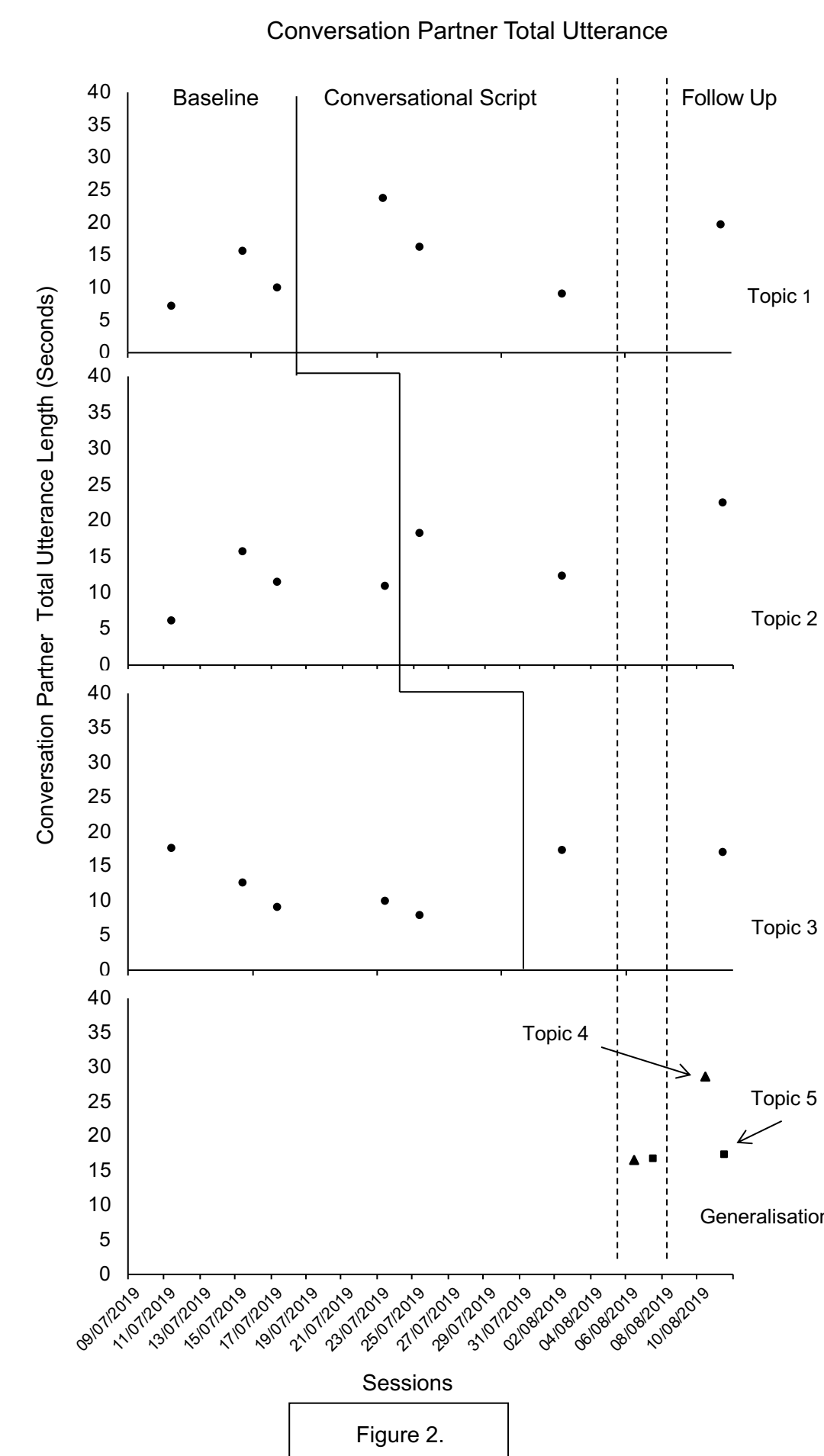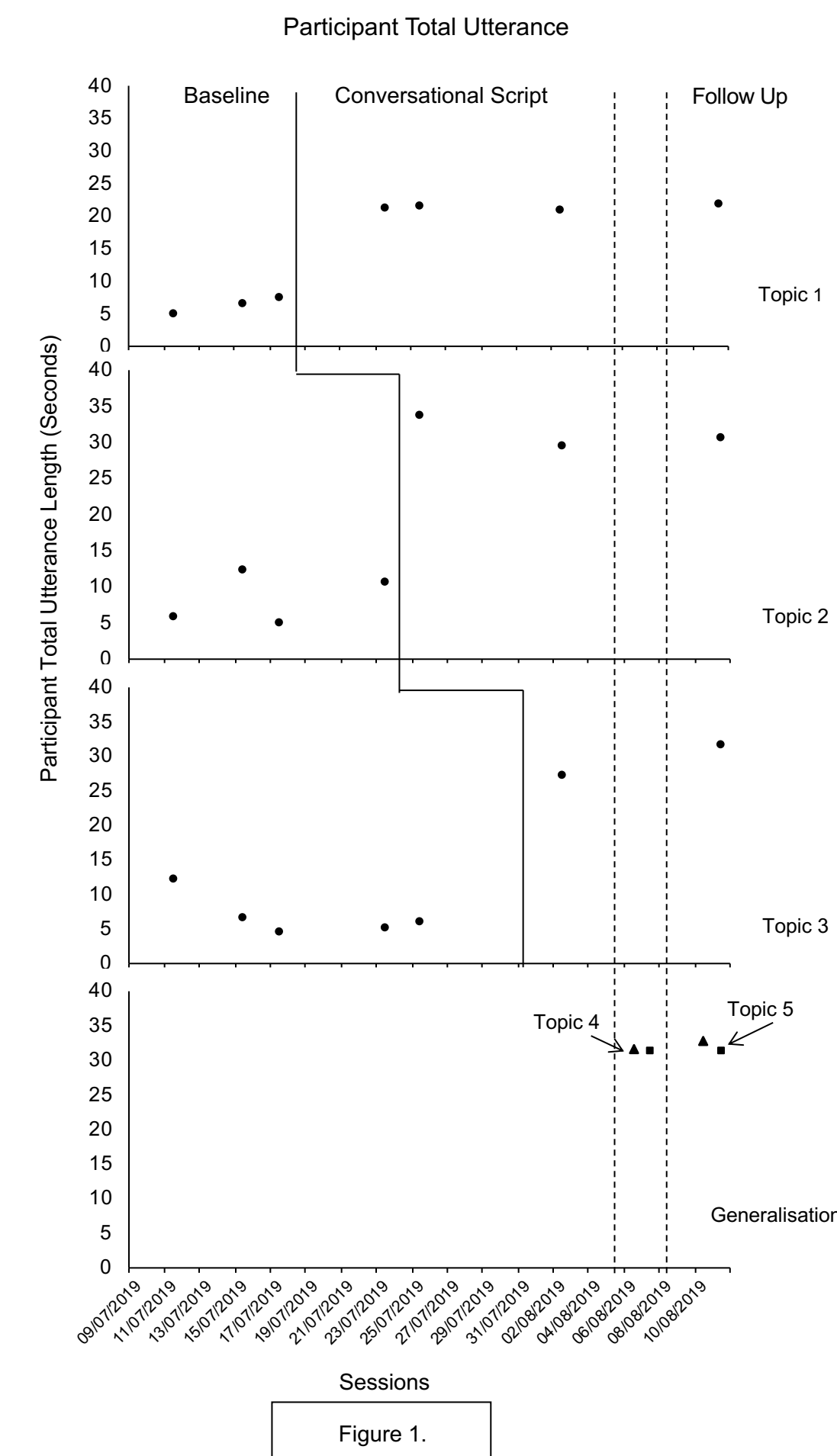|	Not at all / Never	No	Somewhat	Yes	A lot / Yes
Did you enjoy this conversation?	1	2	3	4	5
Would you like to have this kind of conversation again?	1	2	3	4	5
Do you think your conversation partner enjoyed this conversation?	1	2	3	4	5
Do you have similar conversations with friends?	1	2	3	4	5
Did you feel that your conversation partner interacted with you appropriately?	1	2	3	4	5

Method

Participant and Setting. The participant was a 14-year-old boy diagnosed with ASD. He demonstrated emergent 'listener speaker' (Greer and Ross 2006) skills, indicating significant communication deficits (VB-MAPP, Sundberg, 2008). Trained clinical staff provided 1:1 intervention at school and home for 37 and 12-15 hours per week, respectively. Behaviour intervention services were supervised by a board certified behaviour analyst.

Response Measurement. The dependent variables were: a) total utterance (seconds), b) conversational exchanges and c) conversation quality. Audio for all conversations was recorded for data collection purposes. Conversational exchanges were any social exchange wherein two individuals rotated listener and speaker functions. Perceived conversation quality was measured by an assessment questionnaire using a Likert scale (Table 1.).

Table 2.
Example of Scripted Conversation Phrases

SCHOOL			
	ASK		TELL
What	What do you like to do at school?	What	I like to do the recycling at school
Who	Who do you go to school with?	Who	I go to school with (BI)
Where	Where do you go to school?	Where	I go to (school name)
When	When do you go to school?	When	I go to school in the morning

Figure 1.

Figure 2.

Figure 3.

Procedure and Design

During baseline staff said, "[participant], let's talk about (topic)", then asked the participant four questions during each conversation. Before each question staff waited for five seconds to allow the participant to initiate independently. Staff responded appropriately to the participant by answering or acknowledging questions/comments or asking on-topic follow-up questions if appropriate. Once the participant terminated the conversation, or after all four questions had been asked by staff and five seconds of silence had elapsed, staff ended the conversation by saying, 'Speak to you later'. A perceived conversation quality questionnaire was completed by staff to collect baseline ratings.

Data Collection and Interobserver Agreement

The experimenter reviewed audio recordings and manually scored total utterance length and conversational exchanges. Interobserver agreement (IOA) was assessed by comparing a second coder's scores for (24%) of conversations across each conversation topic. IOA means and ranges were: conversational exchanges (88%, range = 86-90%); total utterance (92%; range = 86%-100%).

Conversational training consisted of teaching the participant to emit four questions and emit four comments per topic by referencing a conversation script (Table 2). A fading procedure systematically reduced prompts, leaving only the script to evoke participant comments and questions.

Testing and Generalisation. During testing sessions baseline conditions were reinstated but the participant was provided with the conversation script. The experimenter scored total utterance and conversation exchange frequency. Generalisation probes tested novel conversation topics, people and settings.

Results and Discussion

Participant Total Utterance. Figure 1. shows total utterance emitted by the participant for each topic. Utterance in topic 1 was low at baseline (range 4.8s to 7.6s) but increased after introduction of conversational scripts (range 20.8s to 21.6s). During this time total utterance for conversation topics 2 and 3 remained unchanged. When conversation scripts were applied to topics 2 and 3, a similar increase in utterance was overserved. Generalisation probes demonstrated a continuation of higher total utterance scores; 31.6s for conversation topic 4 and 31.4s for conversation topic 5. Results were maintained after follow up seven weeks later.

Conversation partner total utterance. Figure 2. shows total utterance emitted by the conversation partner in seconds for each conversation topic. Across conversation topics there was little differentiation between baseline and after scripts were introduced. Similarly, generalisation probes for topics 4 and 5 demonstrated little differentiation from baseline rates.

Perceived Conversation Quality. Staff rated baseline conversation quality at 44%. After conversational scripts were introduced, ratings rose to 72%.

With conversational scripts, participant total utterance per conversation markedly increased. Interestingly conversation partner total utterance and conversational exchanges did not change significantly from baseline rates. These data demonstrate that the opportunities for the conversation partner to speak, as well as the number of conversational exchanges remained unaffected, suggesting minimal adverse implications of conversational scripts for others in the participant's community.

Limitations and Future Research

First, social validity measures only reached 72%. Although improvement was observed after scripts were used, anecdotal feedback from staff indicated that a number of deficits demonstrated by the participant limited the conversation quality rating. These included infrequent eye contact and the absence of reciprocal questions or acknowledging comments.

Secondly, an insufficient number of conversational scripts were used. The study targeted only three scripts across three topics. To target generality of intervention effects and increase the utility of the intervention, the participant should be provided with a range of scripts that apply to a greater number of topics. Generalisation probes of two novel conversations suggest that a untaught conversation scripts might be provided to the participant without the need for additional teaching. Future research may also target fading of conversational scripts.

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