

# Helping Answer Needs by Developing Specialists in Autism: Year Two Training Outcomes

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## Abstract

The mission of HANDS in Autism (Helping Answer Needs by Developing Specialists in Autism) is to provide practical and applicable information to a variety of caregivers from an ABA-based framework and to provide an option for training that promotes practical learning opportunities through an innovative and intensive hands-on and coaching experience. The primary goals and objectives of the model are to provide:

- a focus on individual strengths of each student
- a focus on comprehensive training (i.e., assessment to goal development)
- hands on learning with children of various levels of functioning and challenge
- training in a model of didactics combined with modeling, practice, and feedback in a supportive coaching environment
- training to multiple caregivers working hands on with individuals with autism in various environments
- provision of training based on a "best practices" approach to assessment and intervention
- development of curriculum and behavioral planning based on data driven decision making

On the first day of training, participants were asked to complete two measures: one assessing general knowledge of autism spectrum disorders, and the other an open-ended vignette designed to assess their practical application of skills used with children on the spectrum. These measures were repeated again at the conclusion of the final training day. Results regarding change in quality and quantity of skills and knowledge obtained through training are presented. The goal was to use these measures to assess the efficacy and effectiveness of the HANDS in Autism Training Program.

## Introduction

The HANDS in Autism model of training was developed in 2004, a result of project funding from the CDC. Through this clinical experience, it was noted that caregivers coming from traditional educational conferences with excitement to implement what they had learned were not appropriately trained to apply the knowledge they had gained. They became promptly discouraged with the methodologies and processes as they struggled to effectively apply and individualize the principles in their naturalistic setting. It was hypothesized that caregivers would benefit most from a more active learning process that would allow them to better comprehend, envision the application, maintain, and generalize information. The framework and beginnings of this intensive training model were developed over the past 1 1/2 years, with primary consideration provided to an intensive, hands-on training rooted in ABA principles and best practices methodology and guidelines outlined in several documents (e.g., National Research Council, 2001; New York State Program Quality Indicators, 2001; Iovanne, Dunlap, Huber, & Kincaid, 2003). The program seeks to bridge the gap between information learned in more traditional didactic/lecture training modalities and hands-on practical experience. Participants learn in an active environment through didactic, intensive hands-on practice, and feedback sessions. Ultimately, participants are asked to apply the principles learned through the didactic and observation opportunities presented during the training to diverse real life situations as they interact with a variety of child participants differing in age and behavioral and developmental profiles.

## Hypotheses

The training program would demonstrate efficacy and effectiveness by the increased knowledge and understanding demonstrated by participants across both measures. Specifically, participants would obtain better scores at the follow-up assessment compared to their scores obtained at baseline.

## Methods and Participants

Twenty-eight educator/professional participants attended eight hours of training per day for a five-day period in one of three training sessions. Ratings were obtained prior to the start and at the conclusion of the training week.

There were 28 participants, 8 in session 1; 11 in session 2; and 9 in session 3. Across all sessions, 3 school psychologists, 21 educators, 3 teacher aides, and 1 administrator participated. Due to low samples, participants are not reported by position. Furthermore, analyses revealed there were no differences in either knowledge or application across positions or sessions (all  $p > .05$ ).

## Measures & Coding Procedures

### Autism Knowledge Survey

This measure was adapted from a measure of cross-disciplinary knowledge assessment (Stone, 1984). Participants are asked to rate their agreement with a statement about autism spectrum disorders on a 6-point scale (1 = Fully Agree with the statement; 6 = Fully Disagree with the statement). Responses are compared both with other participants as well as to the model or 'correct' responses as determined by the HANDS lead trainers and staff. Current projects are underway to determine the factor structure of this 20-item measure as well as to obtain preliminary evidence of its validity and reliability. Limitations to the measure include its interval properties which makes it more challenging to ascertain whether a participant agrees with the model response but just not to the highest degree or if it might be a function of participants' response style. Additionally, as more research evidence in this field emerges, it is possible that some of the model responses may change making past responses obsolete. Finally, while the use of this measure is an attempt at using an outside measure as opposed to one created for this project, it does not cover all material covered in the curriculum nor does the curriculum cover all the aspects included in the measure.

### Pre-Post Vignette

Vignettes were created using de-identified information from past student participants. Training participants were randomly assigned one of three vignettes and asked to respond to open-ended questions regarding a variety of topics and based on material taught specifically in the training curriculum. At the end of the training session, they were given the same vignette and asked to respond to the same questions. The responses were then de-identified and coded such that raters were blind to whether it was pre- or post-data. Responses were then randomly assigned to the two lead HANDS trainers who coded responses using a 5-point scale (0 = poor response; 4 = excellent response). Ideal responses and guidelines were developed to ensure accurate rating between raters. During the scoring process, it was noted that two items appeared to be misunderstood by a majority of participants and were subsequently removed resulting in a 10-item measure. Analyses revealed no differences between raters or version of the vignettes (all  $p > .05$ ).

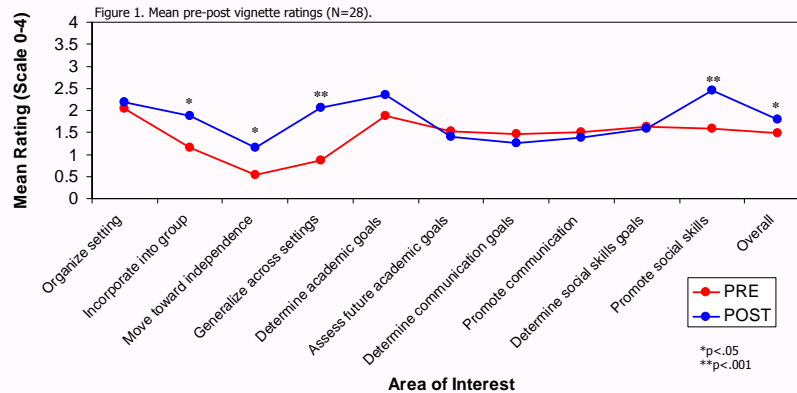


Table 1. Mean scores and mean discrepancies from the model response (N=28).

Question	Score Mean		Discrepancy Mean	
	Pre	Post	Pre	Post
Autism is an emotional disorder.	4.19*	4.78*	1.81*	1.22*
Early intervention can lead to significant gains in children's social and communication skills.	1.33	1.15	.33	.15
All children with autism display poor eye contact.	4.26	4.07	1.74	1.93
Children with autism typically perform better when tasks are presented visually than when tasks are presented verbally.	2.19	1.62	1.19	0.62
Problems with social relatedness that are present in autism are different from social problems seen in other psychiatric conditions.	2.93	2.81	1.93	1.81
Autism is more frequently diagnosed in males than in females.	1.96	1.65	0.96	0.65
Children with autism do not show attachments, even to parents/caregivers.	4.74	5.22	1.26	0.78
Research indicates that sensory integration therapy is an effective treatment for autism and its symptoms.	2.12	2.35	3.88	3.65
Children with autism are deliberately uncooperative.	5.48	5.30	0.52	0.70
Most parents/caregivers of children with autism report their first concerns were related to the child's social behavior.	2.89	3.15	3.11	2.85
Autism tends to run in families.	4.11	3.78	3.11	2.78
We now have treatments that can cure autism.	5.30*	5.96*	0.70*	0.04*
Children with autism can grow up to live independently.	1.89	1.96	0.89	0.96
There is one approach/program that works for all children with autism.	5.52	5.44	0.48	0.56
It is important that all children diagnosed with autism receive some form of special education services at school.	2.85	2.26	1.85	1.26
Autism occurs more commonly among higher socioeconomic and educational levels.	5.04*	5.50*	0.96*	0.50*
Autism can be diagnosed as early as 18 months.	2.12**	1.38**	1.12**	0.38**
With the proper treatment, most children diagnosed with autism eventually outgrow the disorder.	5.42*	5.85*	0.58*	0.15*
Children with autism do not show affection.	5.46	5.08	0.54	0.92
The need for routines and sameness is one of the earliest behavioral features of autism.	2.35	1.88	1.35	0.88
Total			1.42**	1.15**

\* $p < .05$   
\*\* $p < .001$

## Results

Participants did show significant improvements overall and across several areas in both the knowledge and application assessments during a one-week training program. More specifically, there appeared to be a great increase in the ability to describe how to generalize skills across settings, and promote social skills. Despite problems with both measures, these results are encouraging and speak to the effectiveness of this training program in being able to enact immediate change in its participants.

## Conclusions & Future Directions

Overall, there does appear to be evidence of efficacy and effectiveness of this training program on being able to enact change in the short-term. Long-term follow up is planned for future trainings to assess retention of knowledge and skills.

Part of the growing nature of this program is to develop an appropriate assessment of acquisition of knowledge and skills. Based on data obtained at each training session, the pre-post vignette measure is continuously revised and reformatted to better achieve its goal. There are several limitations to this measure. First, participants often noted that the measure was long and somewhat redundant. This may have led some participants to rush through answers. Additionally, because of the open-ended nature of the responses, this measure is very difficult and time-consuming to score. To this end, we have revised the measure yet again as a more objective multiple-choice test that can be used to assess training effectiveness. This measure will be used in subsequent trainings.



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