HANDS in Autism Model: Analysis of Program Efficacy Through Skill Demonstration

Patricia Korzekwa, Naomi Swiezy, Melissa Stuart, Stacie Pozdol & Iryna Ashby

HANDS in Autism, Indiana University School of Medicine

Background

The HANDS (Helping Answer Needs by Developing Specialists) in Autism training model has been developed with primary consideration provided to an intensive, hands-on training rooted in ABA principles and best practices. Participants learn in an active environment through didactic, intensive hands-on practice, coaching, and feedback sessions. Ultimately, participants are asked to apply these principles to diverse real-life situations during structured classroom interactions with student participants differing in age and developmental profiles.

To determine the effectiveness of the HANDS in Autism model, participants were assessed through demonstration of their ability to retain, understand, and apply curriculum material. Specifically, participants were observed during hands-on activities in which interactions with student participants were coded for correctness in applying the skills taught. The skills targeted for this poster include the appropriate use of positive attention and errorless learning prompting strategies. Additionally, participants provided products and written samples demonstrating their knowledge and application of skills (e.g., choreography, physical and visual structure, assessment, grouping). Upon receiving feedback, participants worked to adapt approaches and to revise products accordingly. These adapted behaviors and products were then reevaluated to determine the incorporation of immediate feedback. Through these observations, in-situation activities, and product samples, we were able to demonstrate that the HANDS in Autism model was an effective program for increasing knowledge and practical application of skills relevant to professionals working with children with an ASD.

Methods and Participants

Thirty-two (N = 32) professionals attended one of three week-long training sessions conducted during the summer of 2008. In attendance were 18 special educators, 6 instructional assistants/paraprofessionals, 4 therapists (speech or occupational), 2 administrators, and 2 general educators. The participants were split into three groups per session consisting of 3-5 members each. Data are reported with respect to group (n = 9). The training curriculum included several modules covering a variety of topics (e.g., assessment, choreography, social/communication skills). Each module included a didactic section, as well as an activity and/or hands-on experience with coaching and feedback. The focus of this poster is on the interactions between the participant and student during the hands-on practice sessions. Two skills presented for this poster include positive attention to the student participants (% appropriate and rate per minute) and prompting through errorless learning strategies (% of each type of prompt used during the session). Additionally, products created by participants for use with the students were rated using scales created for this project on the following areas: goals and objectives, incorporation of students' strengths and interests, teaching/prompting abilities, use of physical and visual structure, and miscellaneous (including behavior strategies, data collection, following instructions, etc.). Hands-on interactions with students that were targeted and scored included informal assessment, prompting and teaching (HANDS created and participant created products), and a final activity where participants had to plan and implement a 10 minute activity for all three student participants. Table 1 summarizes the hands-on interaction sessions and the type of data collected at each. Observational data on positive attention and prompting through errorless learning were taken by a trained research team member using a behavior coding software program (see Figures 1 and 2). Product ratings were taken by a trained member of the research team using rating forms created specifically for this project. The items were scored on a 5-point Likert-type scale with higher scores indicating better performance. Scores were calculated by averaging the ratings across the number of items to come up with an average score for each rating scale (see Figure 3).
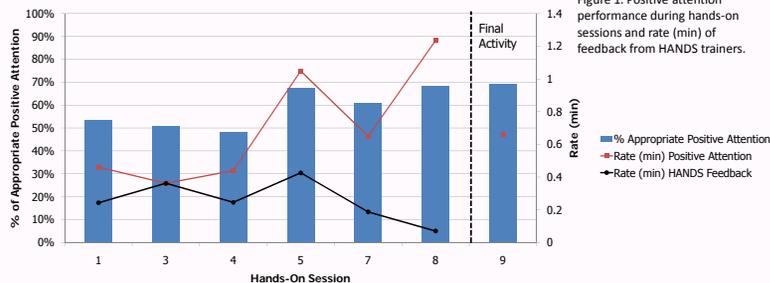

Figure 1. Positive attention performance during hands-on sessions and rate (min) of feedback from HANDS trainers.

Table 1. Summary of hands-on activity sessions .

Hands-On Activity Session	Interaction Type	Data Collected
S1) Prompting	Prompting/Teaching (HANDS Materials)	GORS; OBS
S2) Preference Assessment*	Assessment	Reliability*
S3) Informal Assessment	Assessment	GORS; IARS; OBS
S4) Educational Data Collection	Prompting/Teaching (HANDS Materials)	GORS; OBS
S5) Academic Skill Teaching	Prompting/Teaching (Participant Materials)	GORS; TDRS; OBS
S6) Task Analysis	Prompting/Teaching (HANDS Materials)	GORS, Reliability*
S7) Social/Communication Skill Teaching (1:1)	Prompting/Teaching (Participant Materials)	GORS; TDRS; OBS
S8) Social/Communication Skill Teaching (Group)	Prompting/Teaching (Participant Materials)	GORS; TDRS; OBS
S9) Final Activity	Final Activity	GORS; FARS; OBS

NOTES: GORS = General Observation Rating Scale; OBS = Noldus Observer 5.0 behavior coding software program (positive attention and errorless learning prompting strategies); IARS = Informal Assessment Rating Scale; TDRS = Task Development Rating Scale; FARS = Final Activity Rating Scale.
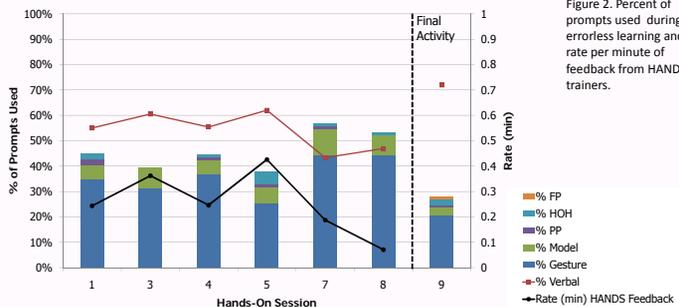* = Results not reported in this poster.

Figure 2. Percent of prompts used during errorless learning and rate per minute of feedback from HANDS trainers.
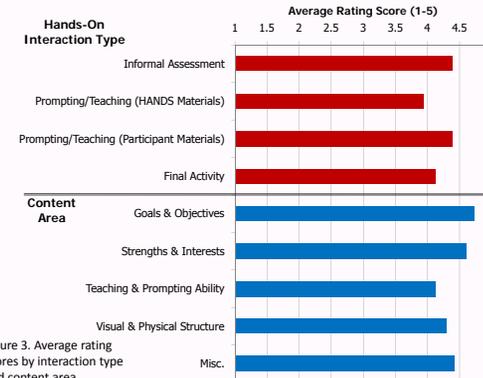

Figure 3. Average rating scores by interaction type and content area.

Results

There was no statistical difference in performance by group or training session (all p>.01), therefore data were collapsed and reported across all three training sessions. For the skills observed, there was an improvement from the beginning of training to the end of training on both percent of appropriate positive attention (Δ 15.9%) and rate of positive attention (Δ 0.2/min) although these values are not significant (p> .05; most likely due to the low sample size). There was no appreciable decrease in the number of verbal prompts used, however, it appears as if a wider variety of prompts was used including more use of gestural prompts as the week went on.

For the ratings, all but one of the interaction types and all of the content areas received average ratings over 4 out of 5. The best performing interaction types were the Informal Assessment (M=4.38, SD=.31) and the Prompting/Teaching (Participant Materials) (M=4.38, SD=.35). The worst performing interaction type was Prompting/Teaching (HANDS Materials) (M=3.93, SD=.28). The content area with the highest ratings was Goals & Objectives (M=4.72, SD=.36). The content area with the lowest ratings was Teaching & Prompting Ability (M=4.12, SD=.22).

Conclusions & Future Directions

There was less improvement in errorless learning prompting strategies compared to positive attention indicating that this may be a particularly difficult skill to master. The best performing interaction sessions appeared to be those where participants created the materials themselves. Perhaps they feel more comfortable when able to practice and develop the materials prior to the interaction as opposed to going into the situation without adequate time or familiarity with materials. The Final Activity shows participants performing somewhat worse in prompting and in the rate of positive attention given. It is important to note that because this was the participants' final training interaction, HANDS staff were instructed to provide no feedback or coaching. Additionally, the groups presented their activity in front of the rest of the participants and included all members of the group as opposed to the other hands-on interactions where only one member was accountable for the success of the child. Discomfort with being observed, the lack of feedback, and having to rely on other members to provide prompts may in part explain the poor performance compared to the performance in others interaction types. The content areas were rated highly although the Teaching & Prompting Ability was rated the lowest. This could be due to performance anxiety of being in a strange situation with people observing and providing feedback on performance. The low sample size did not allow for many comparisons including interaction type by content area.

Future directions of the program include the development of a quasi-experimental model involving the randomization of potential participants into different training formats (including a wait-list control) to better examine the effects of one content area and training modality over another.

For more information, visit our website at www.handsinautism.org

Riley Hospital for Children
Christian Sarkine Autism Treatment Center
A Clarian Health Partner

INDIANA UNIVERSITY
DEPARTMENT OF PSYCHIATRY
School of Medicine