

# Video Modeling

## *Using basic technology to increase self-care and social communication skills*

---

**Research by Michelle Pozin**  
**Reported by Lauren Dolente**

*POPARD consultant Michelle Pozin was approached by a school team in District 20 to help promote social-communication and self-care skills for Sofia, an eight-year-old girl with Autism. Specifically, to help Sofia increase her expressive communication, a goal in her IEP at the time, her parents and teachers wanted her to learn to respond appropriately when a familiar person said “Hi.” Additionally, to promote safety and social propriety in public restrooms, they wanted Sofia to incorporate closing the bathroom door into her toileting routine. Find out how Michelle and the school and home teams were able to use video modeling to teach Sofia to perform these behaviours with increased consistency and independence.*

**A**mong the core deficits of Autism Spectrum Disorder

(ASD), learning and generalizing skills to independent levels can be problematic. As such, those with ASD may become reliant on others for support in school, at home, and in the community. Less than independent functioning diminishes social outcomes for individuals with ASD (Hume, Loftin, & Lantz 2009).

Modeling has been shown to help with skill acquisition, independence, and generalization for children with ASD (Coleman & Stedman, 1974), and is based on the idea that observational learning is an effective teaching strategy for individuals with disabilities. **Video modeling** (VM), in particular, has been used effectively to teach individuals with ASD a variety of skills in a visual manner, as well as support the generalization of behavior

across situations and settings (McCoy & Hermansen, 2007).

### **Benefits of VM**

VM is inexpensive, time-efficient, can be effective in a variety of environments, and can be individualized to specific situations. That is, VM can be used to demonstrate specific skills in natural, particular contexts - *where* the learner is intended

### **3 simple steps to video modeling:**

1. Video record a model (i.e., adult or peer) performing a targeted skill.
2. Have the individual learning the skill view the video.
3. After watching the video, have the individual perform the target skill.

to perform each skill. By providing the exact circumstance in which the behaviour is expected, VM eliminates the gap between training environments and performance environments. Additionally, the format of the model being video recorded enables the learner to access the model independently and whenever needed.

Finally, the visual nature of a video may be an advantage to those individuals with ASD who learn more easily when information is presented

### Advances in Technology Improve VM

Recent advances in technology have enhanced the effectiveness of VM as means of observational learning. For example, the zoom feature allows for cropping extraneous details, eliminating potential confusion regarding which portion of a frame the learner is intended to look at (Charlop – Christy M. H., Le, L., & Freeman, K.A., 2000). Additionally, because technology has become so portable (e.g., laptops, tablets, and smartphones), learners are able to independently view the video model in the setting where the target behaviour is to be performed.

visually. The video format may diminish difficulties with language processing and attention, common among those with ASD.

## In this study...

VM was the approach chosen to teach eight-year-old Sofia to (a) respond when someone says “Hi” and (b) close the bathroom door, independently. Her team chose these target skills as they are lifelong social communication and self-care skills that are important across settings. As her mother explained, saying “Hi” when someone says “Hi” to you is “. . . your basic social nicety, regardless of where you might be going.” In reference to Sofia’s typical response to peers who greeted her with “Hi,” her educational assistant (EA) commented, “She would ignore them, not really look them in the eye, and mostly just walk on by.”

Michelle and her team predicted that by using VM, Sofia would require fewer prompts and would learn, generalize, and maintain the targeted skills with increased independence.

### Measures

Types and frequency of prompts used (i.e., verbal,

visual, or gestural) were recorded on observational checklists. **Figure 1** (next page) shows the form used to record baseline as well as post-intervention data for saying “Hi” (Intervention 1). The average of each type of prompt required per week was calculated and graphed in excel.

**“She would ignore them, not really look them in the eye, and mostly just walk on by.”**

### Baseline Performance

Before VM was introduced, school and home team members took baseline data for one and two weeks, respectively, to determine Sofia’s current skill level. Specifically, school staff and parents recorded the type and frequency of prompts required to help Sofia complete the target behaviours before intervention. They recorded this information two to three times a day. They also videotaped her performing the skills.

Though data collection can often be viewed as a time-consuming and complicated task, the home and school teams discovered that using their observational checklists was quick and easy. As her mother stated, recording data was, “really simple, just a tick sheet.”

**Figure 1. Observational Checklist**



## **DATA RECORDING SHEET**

**Name:** \_\_\_\_\_

**Recorder:** \_\_\_\_\_

**Page** \_\_\_\_\_ **of** \_\_\_\_\_

**Target skill: To respond independently to someone saying “Hi”**

Describe each step, in order, for the skill. Then, for each date on which the skill is observed or practiced, record the level of independence for each step of the skill. Use the following prompt symbols for your records. Use a √ (successful prompt) or – (unsuccessful prompt) when recording.

√	Correct, not prompted	VP (√ or –)	Verbal Prompt
GP (√ or –)	Gestural Prompt	PP (√ or –)	Physical Prompt (Touch)
VSP (√ or –)	Visual Prompt ( Visual support used)	N/C	Not completed

Steps	Description	Date	Date	Date	Date	Date	Date	Date
1	Student turned head towards the person who said “Hi”							
2	Student looked at the person							
3	Student said “Hi” to the person							
4								

1. Video student once performing the skill without prompting before watching the video modeling.
2. Baseline data: take data 2 or 3 times daily for 2 weeks before watching video.
3. Have the student watch the video modeling for one week. – do not take data at this time.
4. Intervention data: After one week of watching the video modeling, take data for 2 weeks
5. Follow up data: 2 months after the intervention, collect data for 1 week.

## Procedure

The following is a description of the procedure used in this study. Figure 3 outlines a basic model that can be adapted by any team wanting to measure pre- and post-intervention data for a VM intervention

**Intervention 1.** A short five-second video model of Sofia’s mother and brother performing the target skill was produced using her mother’s personal digital camera. It is important to test videos featuring different people, as Sofia’s team discovered that she was most receptive to and interested in videos in which her mother was featured.

During intervention, Sofia viewed the video three times per day for one week. She watched them on either the camera, a laptop or on her family’s television. Figure 2 shows Sofia viewing VM on her laptop. During this phase, data was not collected at home but was collected at school.

**Post-intervention.** After one week, Sofia stopped watching the video model but continued to perform the behaviours. Data was collected two to three times per day for several weeks both at home and school.

**Figure 2. Sofia watching VM**



**Intervention 2.** For the second targeted skill (i.e., closing the bathroom door), a second phase of the intervention was included in the study design to enhance the effect of the first intervention. Specifically, Sofia watched the video models three times per day for a second week.

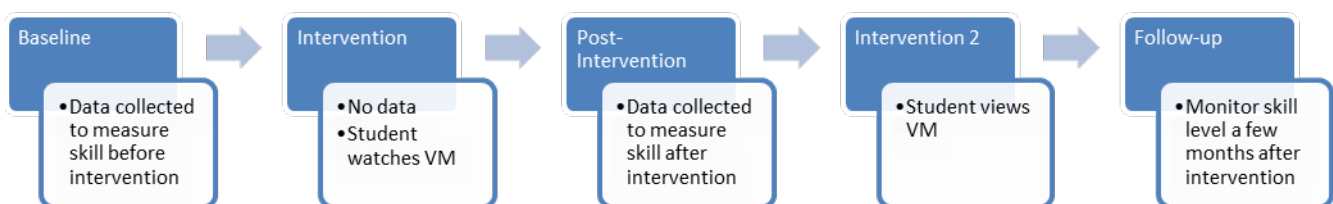
**Follow Up.** Approximately two months after intervention, data was collected for one week in both environments. Additionally, a second video of Sofia performing the behaviours was filmed.

## So what happened?

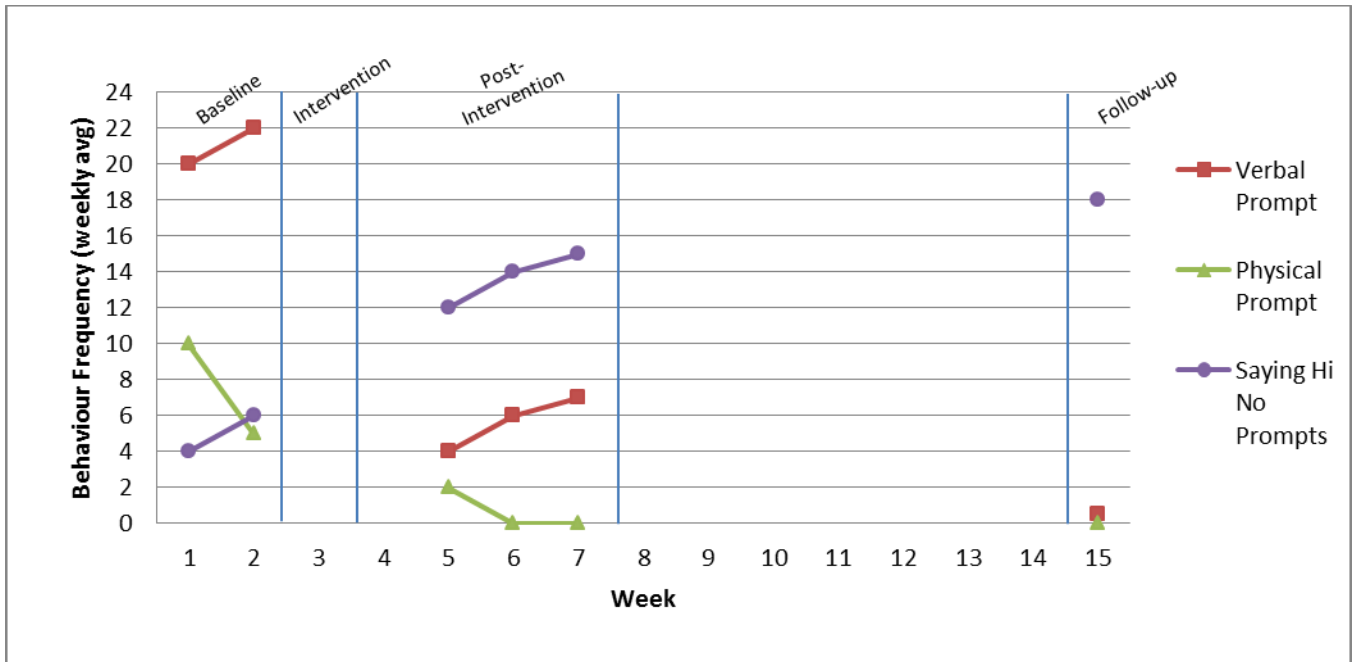
Overall, Sofia showed positive gains in social-communication skills and self-care skills. For the target behavior “Responding when someone says ‘Hi,’” there was a significant decrease in the frequency of all types of prompts and an increase in independent performance of the behavior. Specifically, at home, the number of verbal prompts decreased from an average of twenty-one per week during baseline to approximately six per week in the post-intervention phase. Additionally, physical prompts by her caregivers decreased from approximately seven per week before intervention to less than one per week post-intervention. Notably, Sofia required neither verbal nor physical prompts during the follow-up phase (Figure 4).

The team also observed that Sofia generalized appropriate responding to “Hi” outside of the school and home environments, such as at

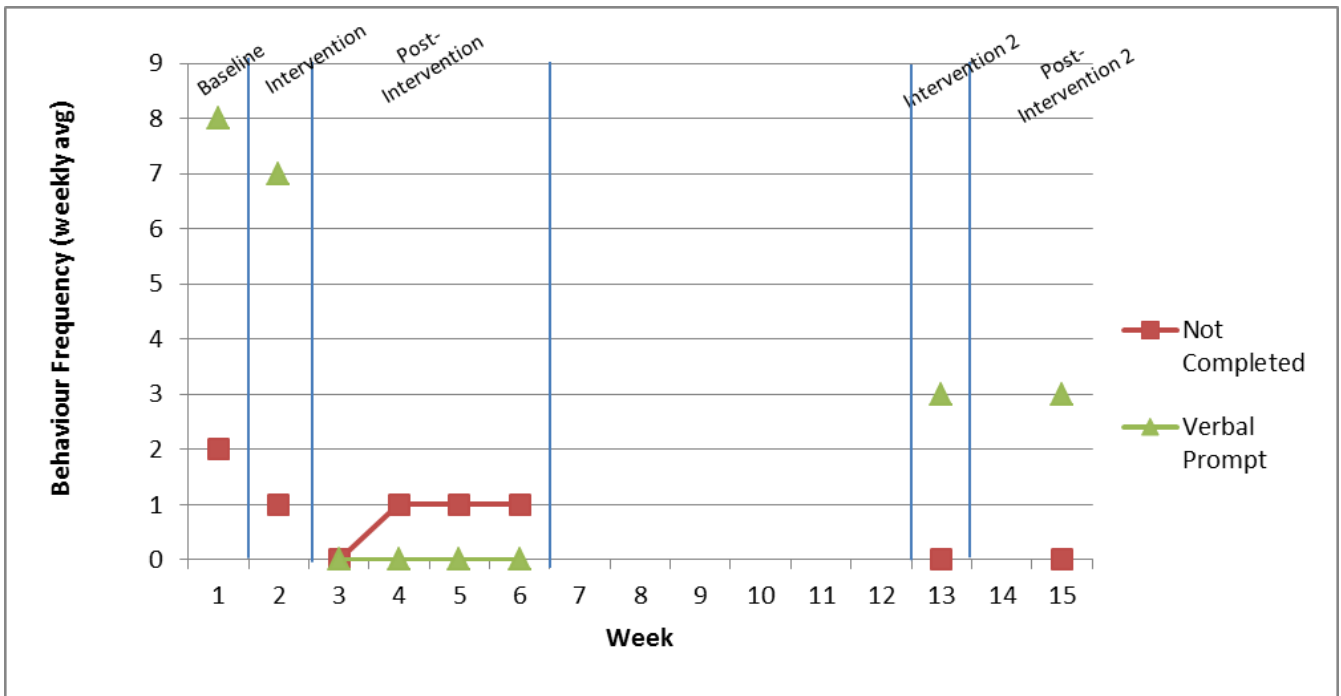
**Figure 3. Basic Procedure for Measuring Outcomes of VM Intervention**



**Figure 4: Saying “Hi” at Home: Frequency of Prompts and Independent Behaviour**



**Figure 5: Closing the Bathroom Door at School: Frequency of Prompts and Incomplete Behaviour**



swimming and on the bus. Moreover, her teachers and EA noticed that Sofia was interacting more with her peers. Specifically, as she began to respond to their greetings, her peers engaged with her more frequently.

**Sofia could generalize this skill outside of the school and home environments, such as at swimming and on the bus.**

For the second target behavior, “Closing the bathroom door,” results again show a dramatic decrease in the frequency of prompts required, especially in the school environment (above, Figure 5). Prior to intervention, Sofia received an average of eight verbal prompts per week and, even with these prompts, did not complete the behaviour consistently. After both intervention phases, only three verbal prompts per week were provided, and she completed the action with each reminder. Moreover, post-intervention data show that Sofia closed the bathroom door 60% of the time at school and 75% of the time at home independently.

### **Bumps in the Road**

It is important to keep in mind that no study is perfect and that life happens. Through the course of this project, Sofia became sick, the school schedule was interrupted by Christmas break, and the team discovered that their data sheets needed to be revised. Events like these should be expected and not discourage parents and teachers from engaging in a similar process

### **Limitations**

The single-subject design of this study reflects the history of other research using VM. While involving only one student limits the generalizability of the results to others, the project provides evidence for the effect of video modeling on the particular target skills chosen for Sofia. The outcome is encouraging with regard to pursuing research on the use of VM as an intervention for teaching other kinds of life skills.

### **Conclusions**

This study adds to the evidence in support of video modeling as an effective means of teaching and generalizing targeted skills in individuals with ASD. Specifically, the results suggest that Sofia was able

to generalize the targeted skills to other environments and people. As such, Michelle, along with Sofia’s family and school team, were able to show the power of a relatively low-cost technological intervention to improve the quality of life for a child and for those who live with and teach that child.

## **References**

- Charlop – Christy M. H., Le, L., & Freeman, K.A. (2000). A comparison of video modeling with in vivo modeling for teaching children with autism. *Journal of Autism Developmental Disorders*, 30(6):537-52. <http://www.ncbi.nlm.nih.gov/pubmed/11261466#>
- Coleman, S., & Stedman, J. M. (1974). Use of a peer model in language training in an echolalic child. *Journal of Behavior Therapy and Experimental Psychiatry*, 5, 275-279.
- Dowrick, P. W. (ed) (1991). *Practical guide to using video in the behavioral sciences*. New York: Wiley.
- Hitchcock, C.H., Dowrick, P.W., & Prater, M.A. (2003). Video Self Modeling intervention in school-based settings: A review. *Remedial and Special Education*, 24, 36-46.

Hume, K., Loftin R., & Lantz, J. (2009) Increasing Independence in Autism Spectrum Disorders: A Review of Three Focused Interventions. *Journal of Autism Developmental Disorders*, 39, 9, 1329-1338.

McCoy, K., & Hermarisen, E. (2007). Video modeling for individuals with autism: A review of model types and effects. *Education & Treatment of Children*, 30, 183-213.

Inquiries related to this project can be addressed to [mpozin@deltasd.bc.ca](mailto:mpozin@deltasd.bc.ca)