Using Video Modeling With Children With ASD

Tom Buggey, PhD

Former Chair of Excellence in Early Childhood Special Education at UTC and Siskin Children's Institute

tombuggey@gmail.com

10th Annual Chattanooga Autism Conference

Friday, May 3, 2019
Chattanooga Convention Center
1150 Carter St, Chattanooga, TN 37402

Caveats

- Remove everything but **positive imagery**. Do not use videos containing negative behaviors.
- **Explain the process** to parents and participants and **obtain consent** prior to filming.
- Explain video archiving:
  – Destroyed
  – Destroyed, with copy to parents
  – Or kept for educational purposes with permission.
- Select **developmentally appropriate** behavior (Collaborate with parents, SLPs, OTs, and PTs.)

About Me and the Move to Autism

Discovery of Video Self-Modeling (VSM) → Use of VSM with Head Start → Use of VSM with Children with Autism

The Temple Grandin Effect

"I THINK IN PICTURES. Words are like a second language to me…When somebody speaks to me, his words are instantly translated into pictures."

- Temple Grandin, *Thinking in Pictures*

Modeling and Autism

- A necessary skill for modeling others is **attention**
- Many people with autism have problems in this area.
- By definition individuals with autism have deficits in social and communication skills.
- Direct interaction with others often results in "escape" behaviors:
  - Averting eye gaze
  - Rocking
  - Echolaic speech, etc.

Bottom line: **Learning via modeling may be difficult for individuals with autism** (Tanaka & Sung, 2016)

Albert Bandura
Guru of Modeling/Social Learning

Findings related to video-modeling:

1. The **best models** are those closest to the viewer in all attributes, including **ability**

2. **Self-efficacy:** the person's perception of his/her ability is directly related to success (Bandura, 1986)

Bandura's Logic and VSM

- No one is closer to the viewer in all traits than…the viewer

- Self-efficacy can be improved if positive imagery of oneself doing a task becomes part of the person's visual memory

Thus, the most powerful form of modeling should be self-modeling.

Anxiety and Persons with Autism

- Anxiety inhibits self-efficacy
- Anxiety is a pervasive trait for persons with autism
- Any new situations/behaviors may cause challenges for this group
- **Powerful tools** – provide:
  - Visual prompts for new situations (**priming**)
  - Evidence that the person can do a task (**video self-modeling, VSM**)

Modeling Definitions

1. **Self-observation:** Viewing oneself performing at present levels – **good, bad, ugly** – e.g., watching game films

   – Mostly positive research findings

   – Has also been linked to **decrease in self-efficacy**/confidence when viewing multiple failures - **not recommended!**

2. **Peer/other modeling (PM):** Someone else demonstrates behavior on film – **good research support**

(Dowrick, 1983)

Model Definitions

3. **Point-of-view modeling (POV):** Film someone completing a task from the viewer's perspective (Hine & Wolery, 2006)

   - Maybe not as effective as self-modeling (?)
   - Advantage: build a library of skills
     - Use movies of a skill (e.g., making the bed) with as many people as you want
     - Use teachers, assistants, therapists, peers, and parents as models

POV Modeling

- **Limitations:** the activity must occur directly in front of the model

- **Ideal for** use with many functional, academic, and **pragmatic language behaviors**:
  - Making a bed
  - Doing math problems
  - Job coaching
  - Interviews

Shoe Tying POV Video

Video Self-Modeling (VSM)

Higher-level skills or more appropriate behavior = all positive

Self-modeling vs. self-observation:

A football lineman makes good plays only 20% of the time

- Watching his 80% failure rate
  - He feels terrible > he loses confidence > he gets worse

- Watching the 20% successes
  - He sees what he does correctly > sees himself succeed > he improves

(Buggey, 2009)

Lillian's Self-Modeling Video

Why VSM for Autism?

1. Sustains attention and limits distractions

- Individuals with autism can watch TV for hours
- The focus might be excessive, but it is a focus
- Extraneous sounds and movements do not grab attention as in other situations.

2. No social obligations (a plus for all forms of video modeling)

- Videos place no social pressure on the child
- Human interaction does

Real people = avoidance

Same people on screen = no avoidance

Why VSM for Autism?

3. Motor imaging

- Used extensively by PT and OT
- Involves focusing mentally on the goal of treatment – developing an image of success
- Very similar to VSM except that VSM provides the actual images of success
- Motor imagery and exercise excite the same areas of the brain

Why VSM for Autism?

4. Physical, Environment, Task, Timing, Learning, Emotion, Perspective (PETTLEP) VSM Priming

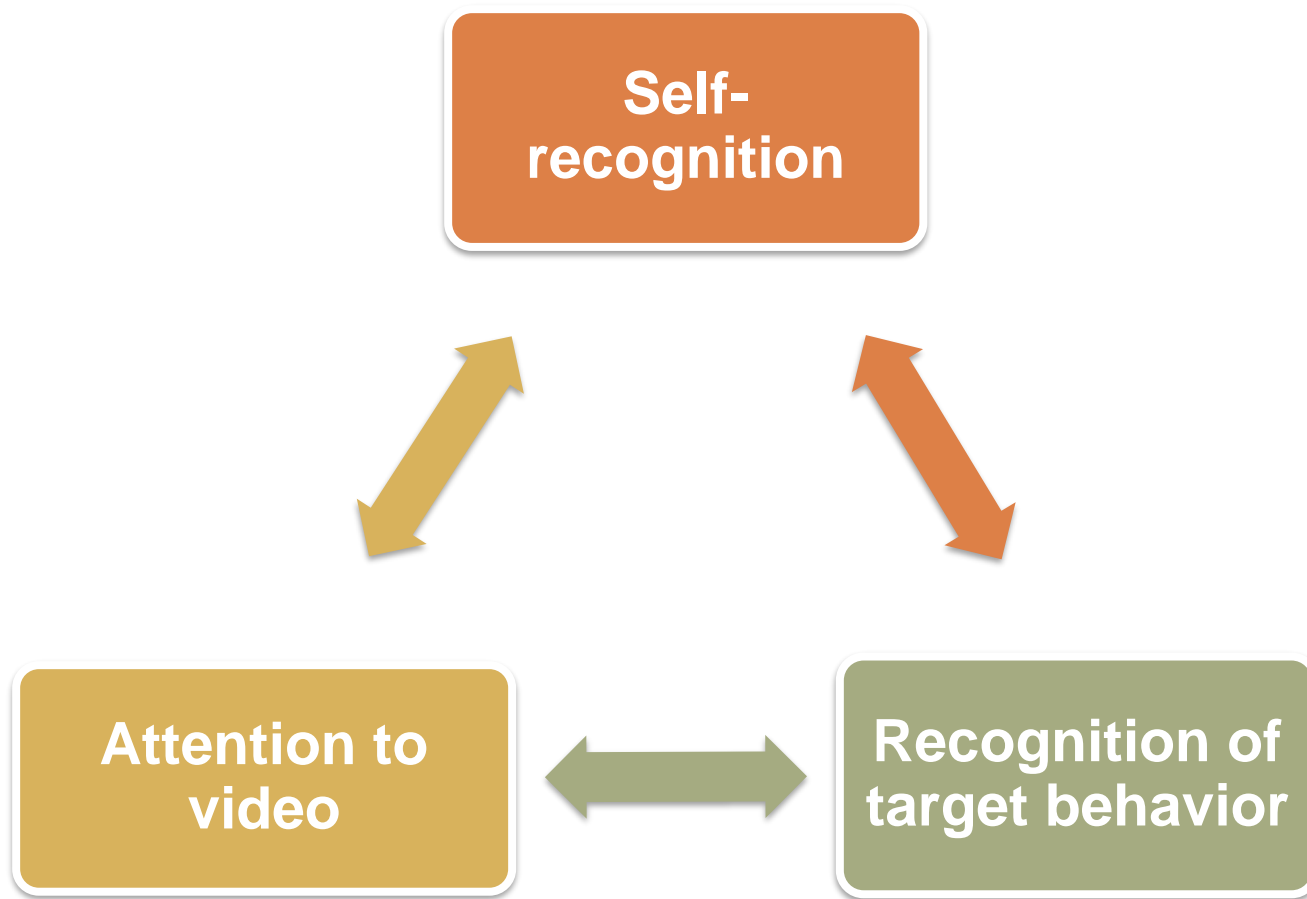People watch VSM of workouts (curls) to prime visual imagery of the task

- VSM + 30 min. workout > 60 min. workout
- All imagery = no gains

It appears to work at several physiological and psychological levels.

(Wright & Smith, 2009)

Three Prerequisites for MAX Results
Maybe

Components of a VSM Movie

1. **Beginning: Positively label the behavior**
   - Helps them recognize target behavior
   - "Here's Tony talking nicely with his friends!"
   - Use cheering/clapping
   - Use titles even if the person can't read
2. **Body**: **Show the person performing the behavior well** from your videos.
3. **Ending: Reinforce/re-label the behavior**
   - "Nice playing, Tony!"

Other elements:
- Self-talk/congratulations
- Internal narration (could be distracting)
- Background music (ambient-mood enhancing)

Capturing Footage for Feedforward Videos

- **Imitation** – Students imitate advanced language skills (one step ahead of morphological/syntax development)

- **Role play** – Fun! Act out behaviors in full Hollywood fashion.
    - Get a director's chair and clacker.
    - Get people involved in production.

- **Capture rare behaviors** (for people who are not responsive to instructions or cues)
    - Set a camera on a tripod and keep it running.

Include the person and family in planning when possible.

Imitation – Language

- Choose someone to be imitated (parent/teacher)
- Capture imitations
- Edit:
    1. Ask questions that fit the utterance
        - Child says - "I go home."
        - Ask - "What do you do after school?"
    2. Cut and paste words into sentences.
- Use Simon Says-type games to capture physical behavior – I do, you do

Video – Maverick

- 3-year-old with apraxia
- Cutting and pasting of words to make simple sentences
- Mostly one-word utterances
- We used video editing to cut out words he had imitated
- We then recombined them into short sentences

# Mav's Video

Role-Play – Social and Functional Skills

- Make it fun and include students in planning when possible

- Works very well with functional behavior assessments and/or positive behavior supports

- Social initiations/interactions can be scripted and lines fed to actors

- Like "Social Stories" on steroids

Replacing Negative Behaviors

- Used with functional behavior assessments
- Triggers for negative behaviors become scenes in the movie – but appropriate responses are acted out
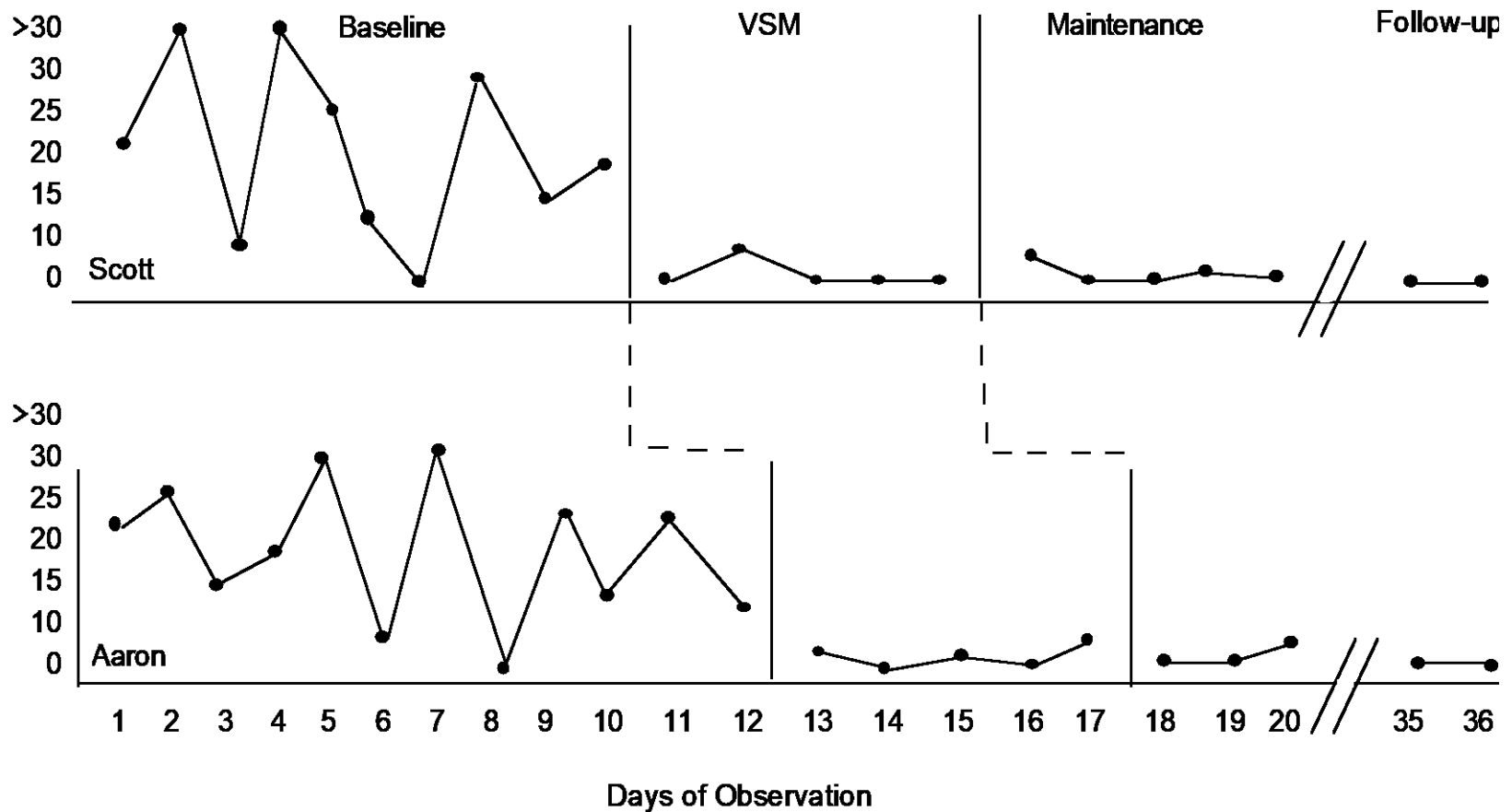
Buggey (2005)
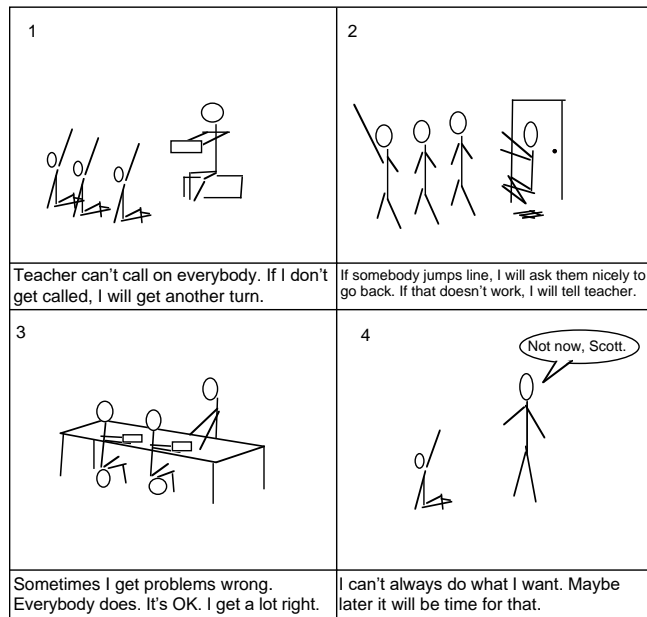
Use story boards to help with planning.

Results

Sometimes, results seem almost too good to be true.

Time spent in tantrum/day

Planning: Storyboarding

1. Identify the target or replacement behavior (something measurable/observable)
2. Determine the best method for capturing the behavior
3. Determine video scenes
    – Do task-analysis of the target or replacement behavior
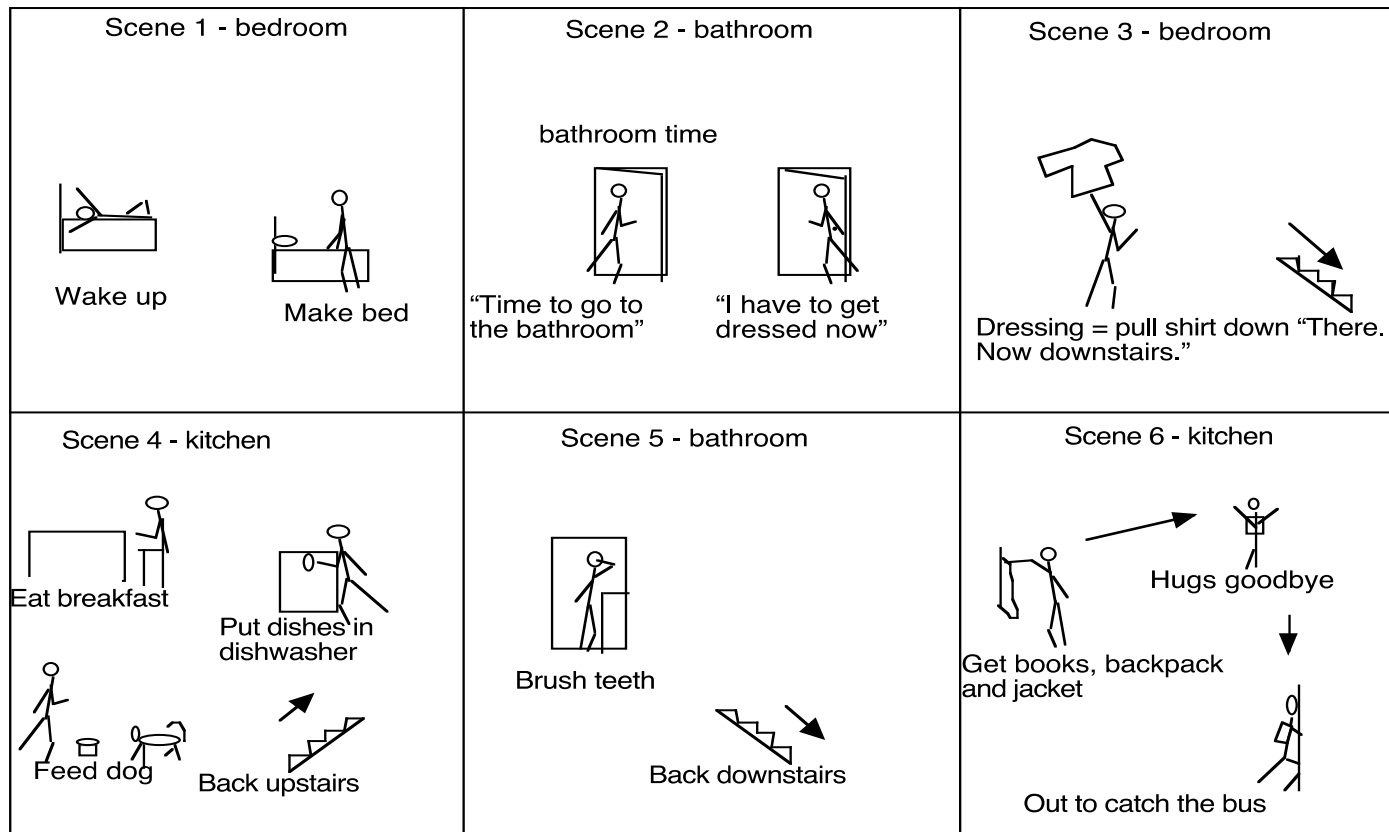   – Make each step a scene

    Or

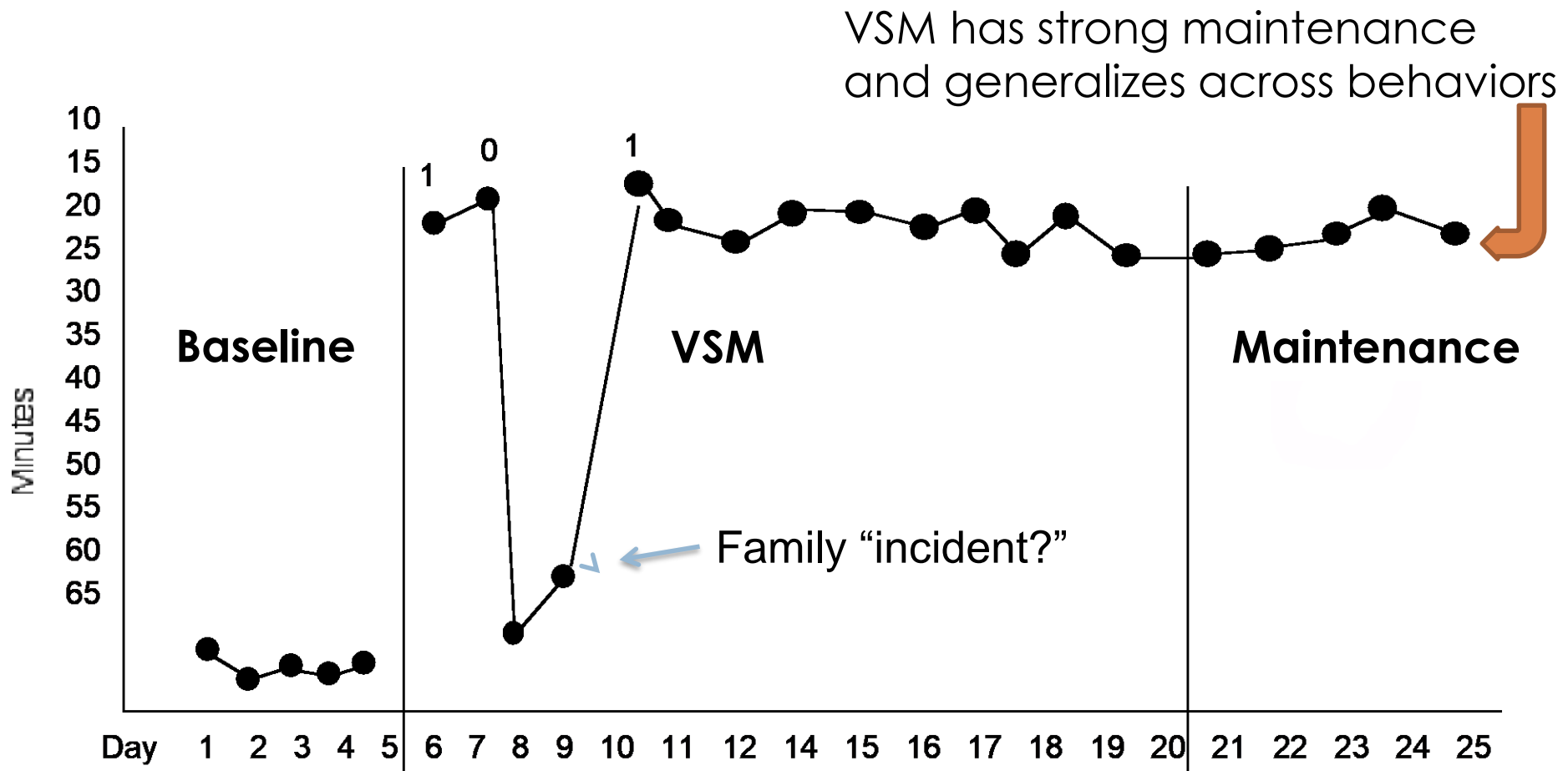   – Make each trigger of negative behavior a scene (Buggey, 2009)

Sample Storyboard
Morning Routine

Task-analysis of morning routine for Ivan

Scene 1 - bedroom	Scene 2 - bathroom	Scene 3 - bedroom
Wake up Make bed	bathroom time "Time to go to the bathroom" "I have to get dressed now"	Dressing = pull shirt down "There. Now downstairs."
Scene 4 - kitchen	**Scene 5 - bathroom**	**Scene 6 - kitchen**
Eat breakfast Put dishes in dishwasher Feed dog Back upstairs	Brush teeth Back downstairs	Hugs goodbye Get books, backpack and jacket Out to catch the bus

Drawn freehand with help from student and family

Completing Morning Routine

VSM has strong maintenance and generalizes across behaviors

Uncooperative Individuals

Let the camera roll, hoping to capture rare behaviors. (Can be time-consuming!)

Examples:
1. **Food issues** (wouldn't put spoon to mouth)
   - Filmed 2 lunch periods
   - Edited all spoon-to-mouth scenes together
   - We have an eater!
2. **Responding to questions**
   - Filmed activity sessions with Q&A
   - A long time for a short video

(Buggey, Toombs, Gardener, & Cervetti, 1999)

Insights

Teens with emotional issues were treated with VSM.

Conclusion:

- Students who changed behavior had difficulty remembering their original behavior.

- *Did VSM supplant old memories?*

Margiano, Kehle, Bray, Nastasi, & DeWees (2009)

Creating the Videos

Plan → Film → Edit → View

Planning

1. Select appropriate behavior (FBAs can be helpful

2. Analyze tasks

3. Turn steps into scenes

4. Plan the filming – who, props, script?, scene…

5. Schedule the filming

Creating the Videos

Plan ➡️ **Film** ➡️ Edit ➡️ View

Filming

- Everything has a camera – use your watch, phone, tablet/iPad, camera, or camcorder

- In some cases, you may want to film for long periods or ensure the film isn't jumping around. There are cheap tripods and stabilization programs in editing software.

- Get a clacker, use the jargon – students love the role play. Film each scene separately. You may need to "cut" and reshoot clips.

Editing

Plan ➡ Film ➡ **Edit** ➡ View

- Video editing apps like iMovie, Movie Maker, and avid are cheap ($5–9) and user-friendly. Some come bundled with the device.

- iPads allow you to film, edit, and view on the same device. Just tap and swipe!

Video: Dr. B. Editing Using an iPad

I don't have this one.

"Cheating"
Special Effects/Stunt Doubles

Use editing to depict events that never happened

1. Sliding:
   - Tommy kneeling at the top with peer + cropped clip of two bodies coming down + clip of him at the bottom = He's sliding!

2. Shaking hands:
   - Tommy walking toward another person + clip of two other people shaking hands + Tommy walking away = Two people greeting

3. Eating:
   - Close-up of a peer's mouth with food + someone using silverware

Photo by Tom Buggey

School to Community Transitions

- Develop units to teach functional/pragmatic skills and to facilitate job coaching
  - Interview skills
  - Hygiene
  - Dressing and looking good
  - Specific job requirements
  - Functional language skills (e.g., safety vocabulary)
- Very appropriate for PoV or PM too (but I still feel VSM is better)

Video Futures: futures planning for transition plan
http://www.creating-futures.org/videofutures/

Visual Schedules:
A Very Simple Form of Self-Modeling

Use photos that include the person rather than picture symbols.

Bathroom

Examples with younger children

Circle Time

Limitations of VSM Use

1. **Minimum age:** factors include cognitive skills, interest in the video, self-recognition and excitement, etc.

2. **Cognitive development:** severe cognitive delays

3. **Interest/attention**

There have been no reports of negative consequences.

No Penalty Failure

ABA - 1:1 therapy, 40 hrs/wk, for several years.

VSM - You will know within 1 week if it is working. (If not, try another method).

VSM Goes Commercial

Lois Brady – <u>INNERVOICE</u> – Remarkable eye and mouth replacement to simulate speech. Very realistic portrayal of the viewer.

Laura Casey – <u>Look at Me Now</u> – Being used by hospitals to prepare youths for visits/procedures. Uses face replacement tech.