

A little about me

- 3 degrees, all in Special Education, The last was a Ph D in Early Intervention with a focus on language interventions from Penn State.
- Taught gifted for 2 years then served as a special education supervisor for 6 yrs. In Nfld, Canada before returning and teaching 8 years in a "mixed category" class with children aged 5 -14.
- Saw how much success I had when children came to me early rather than later > 2nd grade. Young kids did not yet feel defeated.



Viewing Oneself - Definitions

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



Mostly positive research findings; However, it has also been linked to Decrease in self-efficacy/confidence.

I do not recommend this for kids with disabilities except for rare circumstances (and when you are absolutely certain a child's ego can take it.)

VSM: Video Self-Modeling
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- Allowing people to view themselves performing a skill or task that is slightly beyond their present ability or exhibiting behavior that is more appropriate. = **All positive.**



Two Forms of Self-Modeling
Dowrick, 1977

- **Positive Self-Review:** Reinforcing already known skills to improve performance/ fluency



Laura Wilkinson
Gold medal Platform Diver

- **Feedforward:** Video of skills not yet learned. Introducing a new skill or behavior.

The Move to Autism

- 1996 – 2 of my master students asked to do their theses on VSM use with kids with autism.
- It worked! Middle school students w/ moderate to severe autism – responding to questions.
- When I was presenting our results in KY. Someone asked if I had read “Thinking in Pictures”.

"I THINK IN PICTURES. Words are like a second language to me. I translate both spoken and written words into full-color movies, complete with sound, which run like a VCR tape in my head. When somebody speaks to me, his words are instantly translated into pictures. Language-based thinkers often find this phenomenon difficult to understand, but in my job as an equipment designer for the livestock industry, visual thinking is a tremendous advantage. Visual thinking has enabled me to build entire systems in my imagination."

Temple Grandin - from *Thinking in Pictures*



And that was that. All studies since 1996 have been with children on the spectrum

Modeling



All animals depend on modeling for early learning

It usually starts with Mom, but will shift focus to peers as baby grows And socializes

Brain pre-wiring for language learning makes us ready at birth for modeling to begin.

We just wait for physiology to catch up with our ability to express.



Language Modeling

- [Those viral twins](#)

Twins are imitating prosody, body language, turn-taking, and other pragmatic behaviors

Hmmmmm – Twin modeling??????

As it turns out, those twins may be the most effective models for each other.



Video Modeling Formats

- **Peer** - Easy to get typically developing kids to serve as models. There are commercial versions that mainly focus on social skills:

Watch Me Learn®, Model Me Kids®, and Teach2Talk®

- **Point-of-View** - Activities are carried out from the viewer's perspective by holding camera at eye level.

Hine & Wolery, 2006



Albert Bandura – guru of modeling/social learning

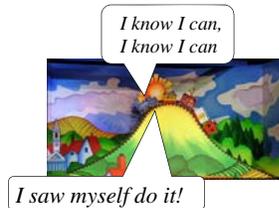
- Bandura's extensive research lends two findings related to self-modeling:

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



Bandura (con't)

- 2. Self-efficacy = The person's perception of their ability is directly related to success.



Why Self-Modeling Should Be Better Than Other Forms

1. Albert Bandura's modeling research
2. Arousal: In spite of everyone saying they hate seeing themselves,
Neurological research indicates increased arousal when viewing oneself. Stimulates other areas of the brain in addition to those associated with other modeling
3. Not only does VSM supply new memories, it may also supplant old ones – Kiehl & Bray
4. And, the unexplained...

PETTLEP VSM priming

Wright and Smith (2007)

- People watch VSM of workouts – curls - to prime visual imagery of the task.
- Those who did that plus 30 minute workout built slightly more muscle mass than those who worked out for 60 minutes.
- (Those who did all imagery showed no gains)



Why Video Modeling - Autism?

1. The Visual Learner

"I THINK IN PICTURES. Words are like a second language to me. I translate both spoken and written words into full-color movies, complete with sound, which run like a VCR tape in my head. When somebody speaks to me, his words are instantly translated into pictures. Language-based thinkers often find this phenomenon difficult to understand, but in my job as an equipment designer for the livestock industry, visual thinking is a tremendous advantage. Visual thinking has enabled me to build entire systems in my imagination."

Temple Grandin - from *Thinking in Pictures*



Supported by research – Bauman, 1999; Quill, 1997)

Why Video Modeling - Autism?

2. Sustained attention/limits distractions

Children with autism can watch TV for hours.

Provides a focus that can be excessive. But it is a focus and extraneous sounds and movements do not grab attention as in other situations.



3. No social obligations

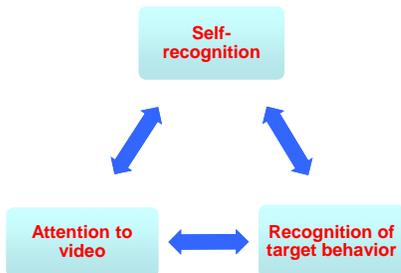
Videos place no social pressure on the child, whereas human interaction does. Real people – avoidance; Same people on-screen – no avoidance. (a plus for all forms of video modeling.)

Other Physiology tie-ins

- Mirror Neurons – The discovery of neurons tied to modeling and empathy.
- May be deficient in children w/ASD – not proven.
- Watching self may work to transcend this weakness?????????

Three Prerequisites for MAX Results

Maybe



Self-recognition

- Onset 14-18 mos.



- We test for this by reversing viewfinder on camcorder and looking for reaction. The “[sticking out the tongue test](#)”.

Side note:

- The only child in a 1-2 yr old preschool room who acted for camera = little boy with Down Syndrome.
- The only 2 children under 4 where we had success = 2 ½ yr old girl with DS who sat and watched herself adoringly.
3 yr old w/ DS – social initiations.

3 Components of a VSM movie

- 1. [Positively label the behavior](#) - helps child discern the target behavior. “*Here’s Tony talking nicely with his friends!*” We usually follow this with cheering/clapping.
- 2. [Body](#) - Child behaving/performing well.
- 3. [Reinforcement at end/re-label behavior](#) - “Nice playing, Tony!”
- Other possible elements: Self-talk/congratulations; internal narration (could be distracting); background music (ambient-mood enhancing).

Let’s follow a child across a full year.

- 4 videos
 - 1. signs and signs w/ word when prompted.
 - 2. Socialization – Initiations
 - 3. MLU – putting words together
- 2 other vids
Tony’s reaction to watching himself
Results following video 3.

Social Initiations

Baseline – T. stayed on periphery moving in a circle around playground or got in a car with roof and sides, but barely moved.



Peer voiceover. Note trickery in slide sequence.

Responding - MLU



Pretty good example of the “arousal” factor associated with viewing oneself.



Tony's excitement wanes as peers appear in the video and returns once their role is over.

How to Capture Footage for Feedforward Videos

- **Imitation** – Great for language. Have children imitate advanced language skills. Keep one step ahead of morphological development.
- **Role Play** – Fun! Act out behaviors in full Hollywood fashion. Get a director's chair and clacker.
- **Capture Rare Behaviors** – Used with children who are not responsive. Camera keeps rolling.

Include child and family in planning when possible



Imitation

- We typically get mom or teacher to help with this - whoever is best at getting the child to imitate.
- Once we capture the child's words, we can get very creative with the editing:
 1. We can ask questions that fit the utterance, e.g. Child says, "I go home". You can dub in adult or peer asking, "What do you do after school?" HOWEVER...
 2. You can cut and paste individual words into sentences - slightly expanding utterances. (You will get a visual "flutter" between words, but this doesn't seem to bother the children.)
 3. You can do Simon Says type games to capture physical behavior - I do, you do.

Cut and paste words



Max. Age 3.0 Apraxia Stuttering Lang Dev. 23-24 mos.

Role Play



- Make it fun and include child in planning when possible.
- Works very well with Functional Behavior Assessments and/or Positive Behavior Supports.
- Triggers for negative behaviors become scenes in the movie - but appropriate responses are acted out.
- Social initiations/interactions can be scripted and lines fed to actors.

For Children Who Won't or Can't Cooperate:

- Camera in situ hoping to capture rare behaviors.
 - I've had two successes with this:
 1. Food aversion - Child rarely put spoon to mouth during lunch. = set up camera for 2 lunch periods, collect all spoon to mouth and link together = we have an eater.
 2. Responding to questions: Filmed play sessions in which questions were asked. Took a long time to get enough responses for short video.
- Very time consuming!

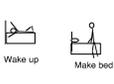
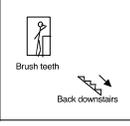
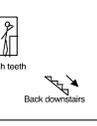
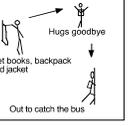
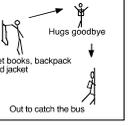


Planning: Storyboarding

- Identify the target/replacement behavior (something measurable/observable).
- Determine best method for capturing the behavior.
- Determine video scenes.
 - Task-analyze the target or replacement behavior.
 - Each step becomes a scene.
 - Or, each trigger of negative behavior becomes a scene.

Sample Storyboard

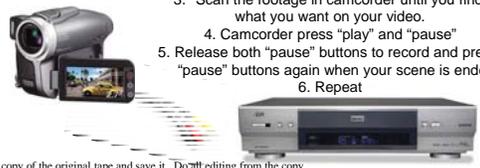
Morning Routine

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

*Drawn freehand with child and family assistance

Editing: Camcorder to VCR Arrangement

1. Connect
2. Have VCR on "play", "record", & Pause
3. Scan the footage in camcorder until you find what you want on your video.
4. Camcorder press "play" and "pause"
5. Release both "pause" buttons to record and press "pause" buttons again when your scene is ended
6. Repeat



- Make a copy of the original tape and save it. Do all editing from the copy.
- If you want to add an intro and ending (recommended), you can just state the behavior ("Let's listen to John talking nicely!") at the start of the tape while covering the lens. You can also prepare a poster stating the behavior and/or praising the observer, e.g. "John is a Super Star!" "Here's John talking nicely!" Just talk while taping the poster.

*It is very important to use "pause" instead of "stop." This will give you smooth transitions. If you press stop, it creates a second or so of static between segments.

Camcorder to Computer



iMovie®

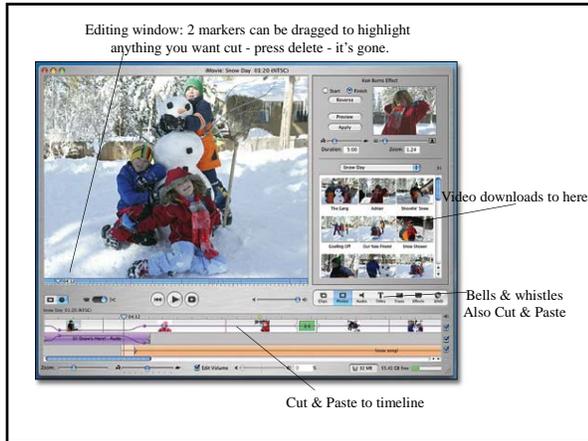


iMovie HD®



MovieMaker®

1. Connect Camcorder
2. Cut and paste
3. Click and drag





- ### Creating the Social Interaction Videos
1. Brought the children to the playground with one or two peers and prompted them to interact (e.g. Hand the truck to Tony. Try to get Tony to go to the top of the slide. Give Tony a hug.)
 2. Filming the entire time, we captured any video that suggested interaction. Even when the child tried to "escape" and the peers gave chase, it appeared to be a game.
 3. Editing: Here's where your creativity comes in. Besides selecting the best clips from the video we did some "cheating".

“Cheating” (special effects/stunt doubles)

- We can use editing to depict events that never happened.
1. Tommy wouldn't slide, but we got him to sit with peer at the top + short clip of him at the bottom of slide + clip of 2 peers coming down clipped at the waist. = He's sliding.
 2. Tommy pushing a truck down a sidewalk + peer pushing truck back at same spot = two children playing.
 3. Eating: We used a video of a close-up of a peer's mouth when inserting spoon with food and paired this with a clip of a child manipulating silverware at lunch....



Visual Schedules

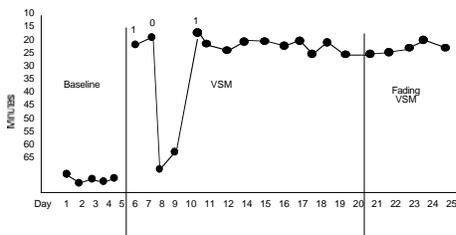
A very simple form of self-modeling

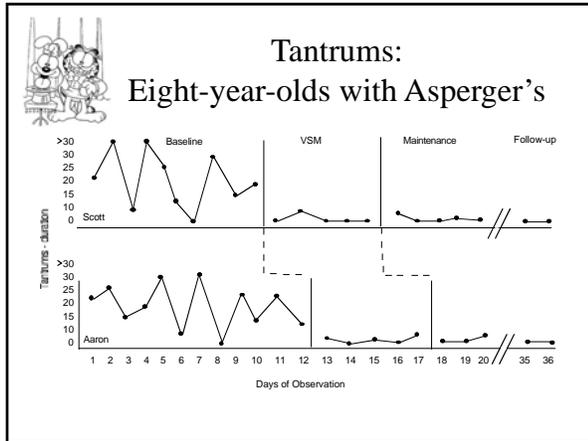


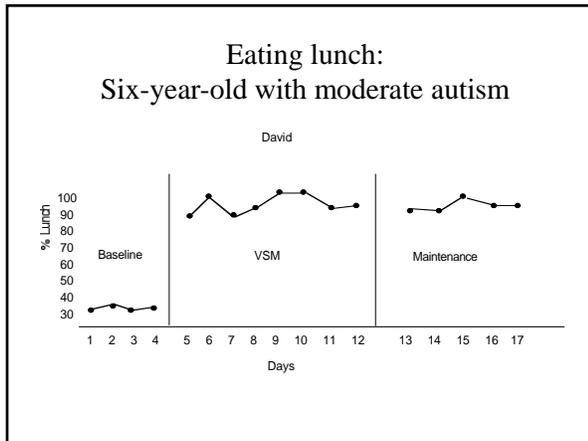


Sometimes: a bit of “magic”

Time getting ready for school







Creating a Tantrum Reduction Video

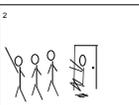
1. Conduct a Functional Behavior Assessment to determine tantrum triggers.
2. Translate triggers to scenes in a storyboard.
3. Plan scenes with child if possible, storyboard too.
4. Set up scenes using peers and appropriate settings. Prompt dialog and go over child's response to trigger in his role of movie star.
5. Film - edit - view.

- Self-talk. Allow kids to give themselves reinforcement
"Wow, I really handled that well!" "That wasn't hard at all!" etc.



Tantrum Storyboard

Self-talk may compliment VSM

<p>1</p>  <p>Teacher can't call on everybody. If I don't get called, I will get another turn.</p>	<p>2</p>  <p>If somebody jumps line, I will ask them nicely to go back. If that doesn't work, I will tell teacher.</p>
<p>3</p>  <p>Sometimes I get problems wrong. Everybody does. It's OK. I get a lot right.</p>	<p>4</p>  <p>I can't always do what I want. Maybe later it will be time for that.</p>

Food Aversion

Reluctant eaters 

- 1. Set up camera during lunch or snack and film child eating.
- 2. Edit film by selecting exemplars of desired behavior and chain them together.

If the behavior is to eat specific food, take footage of the food and pair it with video of the child putting spoon to mouth (Cheating).

If the behavior is spoon-to-mouth, try peer modeling or point of view. You could also cheat by doing close-ups of peers' mouths paired with appropriate antecedent behavior by your child.

Plan for Working on Expanding Sentence/Utterance Length

- 1. **Determine ability level/word use** — collect info from teacher, therapist and parent to create a list of words = words and phrases presently used.
- 2. **Determine goal** — SLP advisement – Parent advisement.
- 3. **Film child imitating** words or phrases. (most can imitate beyond present ability so you could create a movie directly from the imitations) **or**
- 4. If child only uses 1-word utterances, get them to **imitate words** (include a verb or two). Use editing software to cut out single words and combine them into short sentences.

Expanding Morpheme Use

- Have SLP advise on present morpheme use (those child uses and those not used).
- Find next morpheme(s) in the developmental sequence (ed/ing endings, contactible to be verbs, s-plurals, etc.)
- Have child imitate advanced form while filming (“He is my friend”, “I am Tony”, “Mommy is home”, etc.)
- Get enough for 1 ½ minutes or more. Loop if necessary. Create movie.

Fitting VSM into a Positive Behavior Support Plan

- Isolate undesirable behaviors or skills that need to be taught from **authentic assessments**.
- Establish **baseline** rates.
- If a social behavior, define **positive representation** of behavior or a **replacement** behavior.
- If an academic behavior, define a **reasonable attainment point** in the developmental sequence or a **fluency rate** beyond present ability.
- Videotape best or scripted performances.
- Edit.
- Student views tape.
- Monitor classroom/home changes in baseline performance.
- Adjust.

Limitations of VSM Use

- Little is known for certain (lots of evidence though), but:
 1. Age. There must be a lower limit with child characteristics being a determining factor (cognitive skills, interest in video, self-recognition and excitement, other).
 2. Cognitive development: Problematic with children with concurrent cognitive delays.
 3. Interest/attention: If children show little interest in the video or cannot sustain interest while watching, it probably won't work.
- However, it still may be worth a try. Worst case scenario = You end up with a nice, positive video of the child. There have been no reports of negative consequences.

 **Caveats** 

1. Never go too far beyond the child's developmental level. Make sure it's doable.
2. Always have full disclosure and informed consent including disposition of video when intervention is over. Peers too.
3. You can prompt as much as you want during filming, but do not get pushy during viewing. Never say things like, "Look how good you are doing there!" or "See, you can do it." Let the videos speak for themselves.

Possible Applications
Add Your own

- Attention Disorders
- Depression
- Aggressive / disruptive behaviors
- Stuttering
- Elective Mutism
- Responding behaviors - Students with autism
- Motor Problems - "Shirley"
- Language development
- School to community transition (job interviews, task performance...)
- Cognitive skill training
- Parenting skills
- Literacy - phonemic awareness/letter recognition/oral reading
- And, if you want to make millions, think about the application in sports where mental imagery is so important.

VSM goes commercial

- Lois Brady - [INNERVOICE®](#) - Remarkable eye and mouth replacement. Speech and Language skills
- Laura Casey – [Look at Me Now®](#) Being used by hospitals to prepare children for visits/procedures.

Pollymovies® – Alaska - \$1400 for training and support. Think of how much money you saved today.

Think of how much money you saved today.

McCurry & Reynolds (2007)	Literature review of video modeling types	7 of 24 studies included for review addressed VSM	Success failure rates for each study	Self-modeling has produced superior or better results than other methods	Video White & T (2005)	Case Study	36 paired sessions with schizophrenia and personality disorder not otherwise specified	Positive & neutral statements credited to the best being - identical not otherwise specified	VSM was used during program training & primary identified when the program was developed
McCurry & Shapiro (1998)	Multiple baseline across persons	3 children mean age 9:11	Disruptive behaviors	2 of 3 subjects show improvement during VSM compared to other conditions	John, Kurland, Collins, Schumacher, & Schumacher (2005)	parallel case study with control group	31 female teach impaired students Mean age 12.9	Self-empowerment Self-efficacy	Performance and self-efficacy were higher for the VSM group
McGrew, Bauer, Fox & Davis (2004)	Multiple baseline across persons	Four individuals with traumatic brain injury	Cooking performance	Three achieved criterion within 4 weeks, 4 self for 4 weeks, & generalized to new food item					
Mehring & Isbell (1991)	Multiple baseline across persons	4 parent - child dyads	3 parent behaviors	No improvement self parents were videotaped while videotapes exhibited positive behaviors					
Mitch, Clark, & Darker-Spence (1977)	Multiple baseline	12 children ages 7:2	Bed-making	Statistically significant improvement					
O'Brien, et al. (2010)	Randomized control trial	89 adults and adolescents	Smoking	Pre and post test scores showed no difference between standard treatment and VSM. Self-reports of progress were higher among the VSM group					
Ryan, Dwyer, & Spink (2009)	Literature review of video-based social stories for individuals with ASD	44 total single subject studies	Success failure rates for each study	Self and peer models were to be the most effective, but more research needs to be done to determine which model is more effective					
Shaw, Frank, Pineda, Krasner, Ingram, & Schenkman (2001)	Comparison of a multiple baseline across persons and alternating treatments	Five children with autism aged 4 - 11	Response to questions that concerned the child's name and school life. Coded as correct, incorrect, or no response	No significant difference between self and peer video modeled conditions					
Shaw & Harrison (1989)	Pretest-post test	48 children ages 9-13	Friction skills and self-efficacy	VSM and peer modeling were equally effective and significantly better than control					
Watt & Neasearth (2003)	Multiple baseline across persons	4 preschoolers with autism	Spontaneous requesting	Large increase in requesting behaviors					
White, White, & T (2005)	Case Study	36 non-stud	Empire & school						

These studies are those found in which VSM was a primary intervention or was compared to another method. Studies where VSM was part of a package were not included.
