Video Modeling and Video Self-Modeling

Community of Practice Autism
May 20, 2008

Adapted from a Presentation by Teresa Lyons, VDOE T/TAC at Virginia Tech

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Strategies for intervention and to teach new behaviors

Social Stories™, Comic Strip Conversations, Gray, Carol

Power Cards, Gagnon, E.

The Incredible Five Point Scale, Dunn Buron, K., Curtis, M.

Incidental Teaching

Visual Supports

Schedules, Task Lists

Scripts, Cue Cards
Strategies

Each of these strategies involves looking at a variety of behaviors from the child’s perspective.

The child can read about, talk about, & see different expected behaviors through the use of words and pictures.

While these approaches incorporate the child into the “picture”, the child doesn’t get to see the action involved in the skills targeted.
But . . . What if the child could actually see themselves or peers performing expected behaviors?

Would behavior change and could it be a more significant change?
Yes! Yes! Yes!

If I can see it, I can do it!
Temple Grandin

“I think in pictures. Words are like a second language to me. I translate both spoken and written words into full-color movie, complete with sound, which run like a VCR tape in my head. When somebody speaks to me, his words are instantly translated into pictures.”

From Thinking in Pictures (p.6)
Social Learning Theory and Modeling History

Albert Bandura:
- Theories of Social Learning & Self-Efficacy
- The Bobo Doll Studies (1977)
Bandura Bobo Doll Studies

Young children viewed a young adult beating on a Bobo doll
- hit with hammer, sit on it, yell at it

When presented with a Bobo doll and hammers, children interacted with the Bobo doll as they had seen the model do without any reinforcement or adult encouragement

http://psychclassics.yorku.ca/Bandura/bobo.htm
Bandura Findings

Human behavior is primarily learned by observing and modeling others. Observational learning is a cognitive and behavioral change that occurs as a result of observing others engaged in similar actions (Bandura, 1986)
Observational Learning Process

Four steps need to occur:
1. Attention - when model appears more like self, attention increases
2. Retention - we store images seen, bring them up when needed, and reproduce actions
3. Reproduction - images translate into actions when skills are within our repertoire
4. Motivation - there is a reason for imitation to occur

From “Video Modeling: Why does it work for children with autism?” by Corbett & Abdullah, 2005
Why it works in autism?

• over-selective attention
• a restricted field of focus
• preference for visual stimuli (Kinney et al., 2003)
• offers a way to learn through social models without initial face-to-face interactions
• benefit from visually cued instruction
• show strengths in processing visual rather than verbal information

From “Video Modeling: Why does it work for children with autism?” by Corbett & Abdullah, 2005
What is Video Modeling and Video Self Modeling?
Video Modeling

A procedure in which a learner is shown a videotape of a model performing a target behavior or completing a desired task (Sigafoos, O’Reilly, & de la Cruz, 2007)
Video Modeling

“Researchers have shown that the most effective models tend to be individuals close to the observer’s age who have similar characteristics (gender, personality, race and mood) and are functioning only slightly above the observer” (Bandura, 1997, 2001; Thoreson & Hosford, 1973)

As quoted in VSM Applications with Students with ASD in a Small Private School Setting by Tom Buggey (2005)
Video **Self-Modeling (VSM)**

Intervention where observers are shown videotapes of themselves successfully engaging in an activity

VSM is a technique that allows:

1. a child to view themselves as they could be in the future (feedforward)

Dr. Dowrick - Here is your goal. This is what you will look like when you’ve mastered this difficult situation
Videotaped Self-Modeling (VSM)

2. a child to view only positive performances of a behavior that has been targeted for intervention (positive self-review)

Dr. Dowrick - Catch me being good and remind me of it; here are good examples of what you should do more often
Videotaped Self-Modeling (VSM)

VSM increases self-efficacy - the belief that one can succeed

Bandura (1982) proposed that:

“a person has a greater chance of learning a behavior and gaining a perception of self-competence, when s/he perceives a greater chance of success or self-efficacy”. (Whitlow)
Bandura’s Theory of Self-Efficacy

Two methods of increasing

1. Enactive experience - a person would actually see themselves perform a learned behavior successfully. “Self-competence is proven through self-performance.” (Whitlock)
2. Vicarious experience - high self-efficacy can occur through observing behaviors modeled by a person that is most like the individual.

• Peers serve as better models to a child than an adult (as seen in the movement towards inclusive practices)

Last two methods - mastery experience & social persuasion - not relevant to this discussion - can be read about in the book *Self-Efficacy Mechanism in Human Agency* (1982) or [http://www.des.emory.edu/mfp/BanEncy.html](http://www.des.emory.edu/mfp/BanEncy.html)
Enactive Experience relates to Video Self-Modeling

Vicarious Experience relates to Video Modeling
Benefits of video as an instructional medium

Moving visual image that can be readily produced

Ability to gain attention - ability to produce a close approximation to human presence

Interactively controlled

Benefits of video as an instructional medium

Creates a personal involvement - video transports the observer into the depths of the content

Focuses attention on important elements of modeled behavior and ensures that these elements are relevant and within the capacity of the individual

Research has shown video modeling to be an effective treatment for a large range of behaviors including language, life skills, motor skills, play skills, social behaviors, stuttering, elective mutism, attention disorders, behavior disorders, aggressive behaviors, math skills, reading skills and sports skills.
Video Modeling and VSM Success Research

- Problem Behaviors
- Autism, (behavior, social skills, communication
- Academic Engagement
- Impulsivity
- Adaptive Behavior/Daily Living Skills
- Athletic Performance
- Reading Fluency and Comprehension
- Math Achievement
- Articulation Disorders
- Selective Mutism
- Phobias/Anxiety (Speaking, Social, Specific, etc.)
Video Modeling

Live vs. Video Modeling (Charlop - Christy et al., 2000)

• Taught social-communication and functional skills to children with ASD
• Video modeling more effective than live modeling
• Video modeling led to better generalization of skills
VSM Research

Used video self-modeling techniques to increase the social engagement of two preschool children with ASD. Results showed dramatic increases in social interaction with peers that were maintained after the intervention concluded. (Bellini, Akullian, and Hopf, 2007)
Meta-Analysis of Video Modeling and VSM Interventions (Bellini and Akullian, 2007)

Moderate to highly effective in 19 out of 23 studies published in peer reviewed journals

Outcomes included social communication, functional skills and behavior

Covered age span (ages 3 to 20) and autism spectrum (varying levels of language and cognitive functioning)
VSM Research

Language Acquisition
- Use of the word “be” increased in conversation

Responding to questions
- Response rates tripled or quadrupled

Transitions
- Morning “getting ready” routine decreased from 65 to 20 minutes

http://www.utc.edu/Faculty/Tom-Buggey/vsm.html
VSM Research

Lunch
- Increased eating 1/3 of lunch in 30 minutes to completing entire lunch

Preschool Aggression
- Extinguished cheek squeezing behavior
- Extinguished behavior, cheek squeezing ceased

Reading Fluency
- Moved from 2 years below grade level to reading fluently at grade level

http://www.utc.edu/Faculty/Tom-Buggey/vsm.html
Three Methods of generating video

Method 1 - less time consuming
- Have students role-play or imitate behavior that is being targeted
- Effective when targeting social or language skills
- Video, edit, & watch

Leon Video
Method 2

- Provide the child with hidden supports that will enable the child to complete the task
- Video close footage of the child - excluding the provided supports
- Edit out the supports
- Create the illusion that the child completed the task without assistance
Method 3 - most time consuming
- The following method is more suitable to children that are unable to role-play situations or who struggle with imitation.
- Tape the person over a period of time
- Edit the footage to show only the desirable skills/behaviors that may be more rarely performed
A few studies on VSM

VSM Applications with Students with ASD in a Small Private School Setting (Tom Buggey, 2005)
- Targeted 5 children with autism and 4 behaviors

Roy (11) and Tommy (10) - rarely initiated social interactions with peers and adults

Using method 1, the boys participated in role-play with peers - walked up to a group, asked them about their weekend, and discussed favorite activities; asked teachers about HW; asked peers to play
A 3-minute video was created showing the positive interactions Video began with an auditory narrative of “A movie starring Roy. Let’s watch Roy and his friends talk and play together.” Video ended with freeze frame of student with clapping and words “Great job, Roy!”
Boys watched the video each morning before classes began. Both boys made substantial gains.

Roy – initiation of social interactions
Baseline – 0 a day
Intervention – 4.0 a day
Maintenance – 4.4 a day

Tommy – initiation of social interactions
Baseline – .17 a day
Intervention – 3.8 a day
Maintenance – 4.25 a day
Scott (6) and Aaron (8) demonstrated intense tantrums when agitated or frustrated.

Using method 1, both boys role-played situations with their teacher and some peers that would typically get them upset. They also role-played how to react appropriately.

The same process was followed for editing the video and presenting it to the boys.
<table>
<thead>
<tr>
<th>Scott - duration of tantrum</th>
<th>Aaron - duration of tantrum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline - mean 16.25 minutes</strong></td>
<td><strong>Baseline - mean 19.3 minutes</strong></td>
</tr>
<tr>
<td>Occurred on all 10 days and 2x on three days</td>
<td></td>
</tr>
<tr>
<td><strong>Intervention - mean 1.6 minutes</strong></td>
<td><strong>Intervention - mean 4 minutes</strong></td>
</tr>
<tr>
<td><strong>Maintenance - mean 2.8 minutes</strong></td>
<td><strong>Maintenance - mean 2.3 minutes</strong></td>
</tr>
<tr>
<td>* Three weeks later no tantrums were occurring</td>
<td>* Three weeks later no tantrums were occurring</td>
</tr>
</tbody>
</table>
John is a 5 year old boy who was very active and occasionally hit and pushed his classmates.

He also had delays in receptive and expressive vocabulary.

Behaviors targeted for VSM were pushing classmates and language production - unsolicited utterances (word/words) spoken with intent w/o prompting and response to questions
Using method 3 because John was unable to role play, John was videotaped during normal activities for 3 days.

A 2-1/2 minute video of John using appropriate behaviors was created – hugging a classmate, sharing a toy, obeying the teacher’s directions.

Trailer – “Here’s John playing nicely with his friends. John never pushes.”
For the video on language production, the researcher, using frame-by-frame editing, extracted single words from the video footage and created sentences of John speaking.

John’s mother took video of him at home eliciting words and phrases.

The final video was a series of questions being asked of John with immediate answers from John.

Trailer – “Let’s listen to John talking to his friends. He is using a lot of words.”
During presentation of language production video, the data collected did not look promising.

Video was viewed and edited.

Too many visual transitions in original video from questioner to John

New video edited to show more of John - several sentences added and less questions used.
John – pushing behavior

Baseline – mean 2.2 incidents over 5 day period

Intervention – 0 incidents day 1, 1 incident day 2, 0 incidents thereafter

Maintenance
0 incidents a day

John – utterances

Baseline – 0 utterances

Intervention – tape 1
1 week: 0 utterances

Intervention – tape 2
mean 3 utterances

Maintenance
mean 5 utterances
John - Response to Questions

Baseline - mean 0.2 of 10

Intervention - tape 1
one week
Mean 3 of 10

Intervention - tape 2
Mean 3.67 of 10

Maintenance
Mean 4.67 of 10
Creating a Video Model

Steps:

1. Decide on behavior/skill to address

Questions to ask/consider:

- is this a behavior/skill that can be addressed through a less time consuming method
- is this behavior/skill impeding the child’s learning or access to the environment
- is this behavior/skill an important one to change/improve
Creating a Video Model

2. Do a task analysis of skill/behavior - determine each skill needed in sequence - create a storyboard

3. Videotape skills/behaviors

4. Edit video so that only the desirable skills/behaviors are seen (max 3 min)

5. Provide individual a set time to view video of themselves demonstrating desired skills/behaviors
Creating a Video Model

Take data

- Establish a baseline
- Take data during intervention
- Return to baseline
- Take data during maintenance
Cole's Data

- Mom/Beer
- Matthews Center

Data points for different dates from 6-May to 12-May.
Tools needed to generate VSM product

Video Camera - Digital video camera, digital camera or VHS camera

Video-editing software

Audio-editing software

CD or DVD burner
Video Editing Software

ArcSoft ShowBiz® DVD 2
- 50% discount - use code ttacsbDVD50

Ulead® VideoStudio™ 11
Sony Vegas Movie Studio+DVD
- Cost $89.99 at

Pinnacle Studio Version 12
- Cost $49.99 at
  http://www.pinnaclesys.com/PublicSite/us/Products/Consumer+Products/Home+Video/Studio+Family/Studio.htm
Windows Movie Maker included on Windows

Apple iMovie included on Macs
Audio Editing Software

Audacity – free at
http://audacity.sourceforge.net/
Video Capture Devices

Dazzle DVD Recorder

- Cost $49.99 at http://www.pinnaclesys.com/PublicSite/us/Products/Consumer+Products/Dazzle/
Video Modeling Web Resources


http://www.alaskachd.org/video/
Videos on the Web

Leon’s Movie
http://www.youtube.com/watch?v=GxBH1H82fbs

Deon’s movie
http://www.youtube.com/watch?v=SiUv4E9WnZc
&feature=related  (This video reflects the work of Dr. Peter Dowrick)

Siskin Children’s Institute: Breakthroughs in Autism
http://www.youtube.com/watch?v=3oaaveOzBko
(This video reflects the work of Dr. Tom Buggey)

New England Center for Children - NECC preschool playroom
http://www.neccautismplay.com/  (This sight and video are the work of Rebecca McDonald who does a lot of research in the area of Video Modeling)
Greetings Game Video Model -
http://www.youtube.com/watch?v=cER_yy_CWGM&feature=related

Video Modeling Turn-Taking -
http://www.youtube.com/watch?v=Qjg3a3TqhKg&feature=related

Teaching Social Skills to Kids with Autism and Aspergers - used in schools, homes, and therapy centers -
http://www.youtube.com/watch?v=J0nBatn5vUo

Video Modeling - Sharing -
http://www.youtube.com/watch?v=VZdl9Drl5GY&feature=related

Video Modeling - Firefighter -
http://www.youtube.com/watch?v=T07l3kW7TJM&feature=related
References


Bandura, A. Retrieved from [http://www.des.emory.edu/mfp/BanEncy.html](http://www.des.emory.edu/mfp/BanEncy.html)

Bandura, A. (1982). Self-efficacy mechanism in human agency


References


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Greenberg, Buggey, & Bond - Video Self-Modeling as a Tool for Improving Oral Reading Fluency and Self-Confidence (ERIC - # ED471091).


