Video-Based Instruction for Students with Autism

1ST ANNUAL RICHARD SIMPSON AUTISM CONFERENCE
OCTOBER 4TH, 2018

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Turn and chat with someone in your general proximity. Tell them a little about your current role and what interested you in this workshop.

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Session Overview

What is video-based instruction?

Why use video instructional tools for students with Autism?

Types of Video Based Techniques
- Video Modeling
  - Video Self-Modeling
  - Video Others Modeling
  - POV Modeling
- Video Feedback
- Video Prompting/Video Priming
- Social Emotional Learning via Video

Video Editing and Development

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Video-Based Instruction

A loosely connected collection of techniques that deliver different types of instruction (e.g., modeling, prompting, self-reflection/self-evaluation) via video technology.

- Video Modeling
- Video Feedback
- Video Prompting/Priming
- Other

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Why Use Video Instructional Tools?

They appear to work (e.g., they appear to influence behaviors of interest)

They are often preferred by students with autism Cardon, & Azuma, 2012

They are consistent Bellini & Akullian, 2007

They are efficient Charlop-Christy, Le & Freeman, 2000

Learning style match

Repetition

Combine with other practices

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State of the Evidence for Video Based Tools

Both the National Autism Standards Project and the National Professional Development Center on Autism Spectrum Disorders list video modeling as an Evidence-Based Practice

Other video based supports (prompting, feedback) have promising levels of evidence supporting their use for students with Autism see Canella-Malone, O'Reilly, & Sigafoos, 2006; Cihak, & Alberto, 2006; Thieman, & Goldstein, 2001

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Key Takeaways

Matching intervention outcomes and components to student needs and characteristics

Assessing potential risk factors

Decision making with other stakeholders

Carefully examining the effectiveness of intervention/strategy effectiveness

Simpson,& Crutchfield, 2013 7

Video-Based Instruction

Turn and chat with someone in your general proximity. Talk with them about any specific video based approaches that you have used. What worked? What didn't? How did the student(s) respond?

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Video-Based Instruction

A loosely connected collection of techniques that deliver different types of instruction (e.g., modeling, prompting, self-reflection/self-evaluation) via video technology.

- Video Modeling
- Video Feedback
- Video Prompting
- Other

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What is Video Modeling

"A behavioral technique that utilizes videos rather than live scenarios… to expand the learners ability to memorize, imitate, or generalize and adapt targeted behaviors" (McCoy, & Hermansan, 2007, p. 183).

Types of Video Modeling

- Video Self-Modeling (VSM)
- Video Modeling With Other as Model (VMO)
- Point-of-View Modeling (POV)

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Video Self-Modeling

Video of the student successfully implementing the target behavior

- Two types
  - Positive Self-review
  - Feedforward

Dowrick, 1999; McCoy & Hermansen, 2007; Shukla-Mehta et al.,2010

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Video Self-Modeling: Positive Self-Review

- Video showing successes of desired behavior
- For behaviors already in the students repertoire but not consistently used
- Capture footage of student (usually hours) and edit out everything except positive exemplars

Dowrick et al., 2006; Hitchcock, Prater, & Dowrick, 2004

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Video Self-Modeling: Feedforward

- Provides students with an "*image of future mastery*" (Dowrick et al, 2006)
- Prompt individual to engage in skill and then edit out prompts (hidden supports)
- Video clips of components of skill and then merge together into one video clip

Dowrick, 1999; Dowrick, Kim-Rupnow, & Power, 2006; Hitchcock et al., 2003

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Video Modeling with Others as the Model

- Video exemplars are provided by "actors"
  - Adult
  - Peer
  - Known or Unknown
- Requires creation of a script and careful planning, coaching, and directing

Dowrick, 1999; Dowrick, Kim-Rupnow, & Power, 2006; Hitchcock et al., 2003

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Point-of-View Video Modeling

First person perspective

- Actor's face not seen in the video
- Advantages over Video Modeling other and Video Self-Modeling

Dowrick, 1999; Dowrick, Kim-Rupnow, & Power, 2006; Hitchcock et al., 2003

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Behaviors Targeted by Video Modeling Research

Functional Skills
- Personal Hygiene
- Purchasing Items
- Laundry
- Cooking a Meal

Play
- Imitation
- Sharing

Appropriate Behavior
- On-Task
- Transitions
- Following Directions
- Reduction of Problem Behavior

Social Skills
- Initiations/Greetings
- Responding to Peers
- Conversation Skills
- Playing with Others
- Requesting/Social Communication

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Creating Video Models

VSM
- Determine behavioral targets
- Determine which type
- Positive Review:
  - Record video in settings were behavior is likely to occur
  - Edit out non-examples
- Feedforward:
  - Record "engineered" activity
  - Provide necessary prompts to student
  - Edit out prompts

VMO
- Determine behavioral targets
- Recruit stakeholders
- Task analyze behavior
- Create script (if necessary)
- Record video clips (corresponding to task analysis)

POV
- Same as above
- Find a way to capture POV sequences

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Features of High Quality Video Models

Accurate Demonstrations of the Target Behavior

Ideally video models should demonstrate examples of the target behavior. Models should show:
- DESIRED behaviors
- Realistic representations of these behaviors in natural settings
- Focus/highlight on particularly necessary components of the behavior

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Features of High Quality Video Models

= 1-3 minutes

Ideally video models should demonstrate clear and concise examples of the target behavior. Consider these areas when determining length of the video model.

- Complexity of the target behavior
- Attending capabilities of the student
- Setting

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Features of High Quality Video Models

Consider Quality of Final Product

The quality of the video should not detract from the model. Consider these simple solutions for higher quality videos

- Tripod
- Microphone

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Features of High Quality Video Models

Limit the Distracting Details

While it makes sense to use simple text and narration (depending on the student), limiting effects (transitions, music, or filters) and other extraneous stimuli is a good rule of thumb.

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Choosing Equipment

Never before have everyday people had access to such quality video recording devices. MUCH easier to record, edit, and export video models (and its only going to get easier).

$50-????

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Trouble Shooting Video Modeling

- Is the student attending to the video?
- Is the student able to make meaning of the video?
- Is the behavior demonstrated succinctly?

- Package with:
  - Reinforcement
  - Self-management
  - Try video prompting

(Deichtman, 2010; Crutchfield, Weber, & Simpson, 2013)

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Video Feedback

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Video Feedback

- A video instructional technique in which students watch a video of themselves and evaluate their own behavior
- Generally used to address social performance or other more complex skills
- Novel approaches incorporate broader video clips (i.e., from popular culture)
- Should include formal feedback routines
- Control over the medium appears to offer great benefit

(Deichtman, 2010; Crutchfield, Weber, & Simpson, 2013)

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Self Evaluation Routines

- Often we must teach students with ASD to self-evaluate
- Discrimination training
  - Example/non-example
  - Naturally occurring environments
  - Reinforce accuracy
- During training use video-taped behavioral rehearsals or other video exemplars

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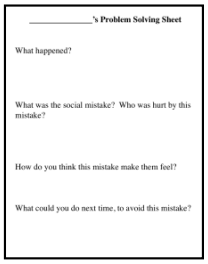
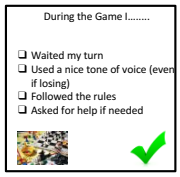
Examples of Feedback Routines





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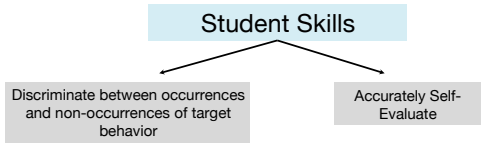
Prerequisite Skills Necessary to Benefit from Video Feedback



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Appropriate Targets*

Complex/Abstract Social Skills
- Voice tone
- Body language
- Reciprocal conversations
- Asking and answering questions
- Matching voice tone and volume to situation

Play Behavior
- Turn taking
- Following the game rules
- Sharing
- Listening to others

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Implementation Protocols

Video Development
- Identify target
- Record behavior in natural setting
- Edit unwanted or unnecessary footage

Feedback Routine
- Watch video all the way through
- Re-watch video priming students to watch for certain things
- Student completes self-evaluation
- Provide error correction by returning to the video footage when necessary

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Troubleshooting Video Feedback

- Is the student able to accurately discriminate occurrences/non-occurrences of behavior?
- Is the student able to accurately provide self-feedback?
- Does the video contain too many distracting elements?

- Package with:
  - Reinforcement
  - Behavioral rehearsals
  - Peer instruction
  - Try video modeling

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Video Prompting

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Video Prompting

- A video instructional technique in which students are shown brief clips of discrete behavior as a prompt to engage in that behavior
- Akin to task analytic instruction, where each step in the task analysis is represented by a video clip
- These clips can be chunked over time
- Video prompting can be a precursor to video modeling

Chihak, 2015

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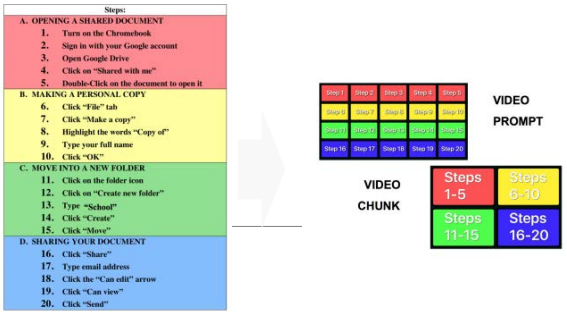
Implementation Guidelines

- Identify targeted skill
- Create a task analysis
- Record a video of each step in the task analysis
- Embed the video clips in a choice board app or Go Talk Now
- Develop a corresponding task analysis or visual support (in case the student "gets lost"
- Use error-correction and prompting procedures as necessary



Gasser, Kirschner, & Crutchfield, 2016

Appropriate Targets

Chained Tasks

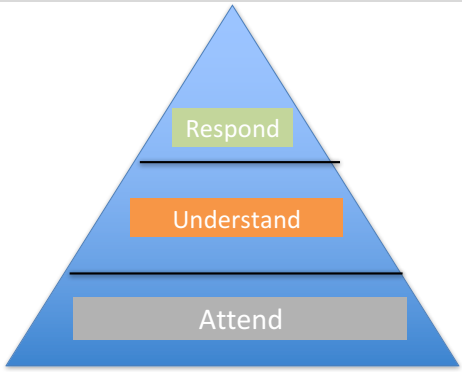
- Tying shoes
- Making lunch
- Riding the bus
- Transitioning between activities
- Accessing technology
- Academic applications

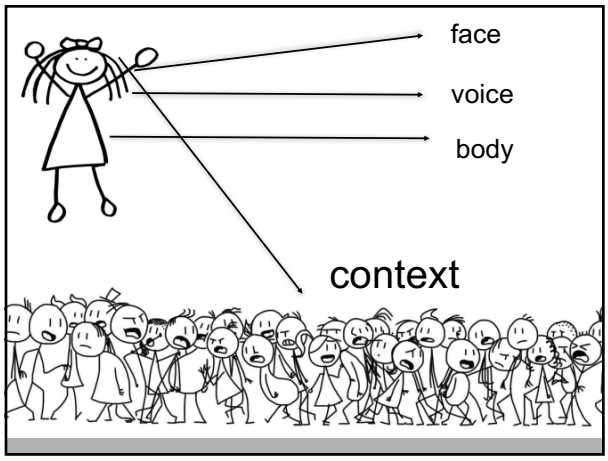
Emotion Recognition

- Importance in ASD
- Challenges due to many facets
  - Social understanding
  - Integrating senses
  - Sensory overload
  - Other
- Evidence from research, self-report, etc.
- Developmental and spectrum considerations
- Implications

(APA, 2013; Capps et al., 1992; Golan et al., 2006; Golan et al., 2008; Grandn, 1999; Jones & Klin, 2013; Kuusikko et al., 2009; Mahler, 2015; Uljarevic & Hamilton, 2012)

Emotion Recognition





Teaching ER with Traditional Methods

- Direct instruction
- Discrete trial
- Social skills groups
  - Good but…
    - Limited generalization
    - Motivation
    - Learning styles

Teaching ER with Technology

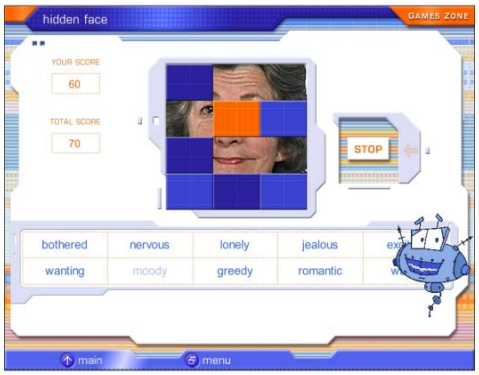
- computer programs/games
- commercial videos
- virtual reality
- video modeling
- video detective
- other

Mind Reading: The Interactive Guide to Emotions

Baron-Cohen, Golan, Wheelwright, & Hill, 2004


excited group
EMOTIONS LIBRARY
excited emotion
4 of 10
definition : very happy and enthusiastically looking forward to something good that is going to happen
simple definition : you want something to happen a lot
similar emotions : thrilled
images
stories
voices
info
notes
back
main
menu
level 4
scrapbook
search


top 100 emotions [1-10]
QUIZZES
reward
Sally is feeling kind
1
2
3
watch the videos, who is feeling kind, 1,2 or 3?
back
main
menu
level 4
scrapbook


hidden face
GAMES ZONE
YOUR SCORE
60
TOTAL SCORE
70
STOP
bothered
nervous
lonely
jealous
wanting
moody
greedy
romantic
main
menu

Mind Reading - Research

- Initial British studies highlighted gains in ER in adults and children with ASD (Golan & Baron-Cohen, 2006; Golan et al., 2008)
- Findings from U.S. studies have shown ER gains with some anecdotal evidence of generalization (LaCava et al., 2007; LaCava et al., 2010; Thomeer et al., 2011; Weigner & Depue, 2011)

The Transporters

(Changing Media, 2006)

The Transporters

- DVD with 15 short videos and quizzes
- Addresses basic and more complex emotions
- British English and North American versions

The Transporters - Research

- 3 published foreign studies to date
  - Golan et al., 2009 - England
  - Young and Posselt, 2011 – Australia
  - Williams et al., 2012 – Australia
- Mixed findings

The Transporters - Research

- Golan et al., (2009) found that using the DVD significantly improved emotion recognition skills for young children with HFASD
- Young and Posselt (2011) replicated Golan's work with similar success
- Williams et al., (2012) only found improvements in ER of anger and their participants had more cognitive impairment

The Transporters - Research

- LaCava et al.'s (2016) pilot study found that using the DVD significantly improved emotion recognition skills for 12 children ages 4-10 with ASD
- Anecdotal reports from children, parents and teachers support the DVD as a motivating tool
- Several reported that children increased use of emotion vocabulary and began to pay more attention to faces and to situations that evoke emotional responses

Virtual Reality

- Didehbani et al., 2017 - used Second Life™ with 30 children ages 7 – 16 with ASD
- Coach provided ongoing feedback
- Interacted with peer with ASD
- 5 week intervention – 2 hours per week

Virtual Reality

- Found improvements on ER, social attribution, and executive function
- Results are promising given that they did not specifically train for ER

(Didehbani et al., 2017)

Video Modeling

- Make specific to student
  - Target skill
  - Consider length
  - Context
- Use whichever type fits – VM, VSM, POV, Prompting
- Can buy commercially
- Corbett, 2003
  - case study of 8 y.o. with autism
  - acquired 4 basic emotions after VM intervention

Video Detective

- Use of tv shows, movies, etc.
  - 3rd Rock, Big Bang, etc.
- Fit for age/development
- Prime/point out cues
- Repetition
- Look for successes and challenges
- Make connections

(Myles & Aspy, 2016)

Teaching ER with Technology

Summary

- Importance of adult/peer supports, mediation, prompting, etc.
- Practice
- Motivation
- Individualize

Editing Video

- Trimming Clips
- Splitting Clips
- Duplicating Clips
- Adding Text
- Adding Narration

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Editing on an IPAD

Creating Videos Using Apple iPads - Demo

Thanks

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