Teaching Developmentally Appropriate Motor Skills Using Video Technology

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The Challenges

- Students do not progress at the same rate when learning motor skills
- Challenges associated with meeting the needs of a large group of diverse learners
- Individualizing instruction and designing appropriate task progressions is critical

How Do You Teach Motor Skills?

- Modeling vs. verbal instruction
- Modeling – the learner attempts to imitate an observed action or skill performed by another individual (the model) (McCullagh et al., 1989).
- Types of Models:
  - Higher-status models (athletes, teachers, parents, coaches)
  - Peers (same age, older)
  - Oneself (self-modeling)

Conditions for Modeling (Bandura, 1986)

- The Environment and Model:
  - Carefully structured content
  - Providing certain conditions of exposure
  - Characteristics of the observer and the model matter
- The Learner:
  - Attention – pay attention to the skill cues
  - Retention – remember the skill cues
  - Production – reproduce the skill cues
  - Motivation – have a reason to imitate the skill cues

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Purpose of the Presentation

- Modeling is a complex process
- The need to individualize motor skill learning
- Video as a means to facilitate motor skill acquisition in children
- This presentation should help practitioners implement video-based modeling when teaching motor skills to children

Video-Based Instructional Strategies

- Video Prompting (VP):
  - Student watches a single learning cue of a motor skill in a video clip at a time and performs that cue before watching the next video clip of the subsequent cue.
- Video Modeling (VM):
  - Student watches a sequence of learning cues in a video clip and tries to perform the entire skill without additional prompting.

Video Prompting

(video trimmed and title added in iPad iMovie, mark-ups and voiceovers added in Coach's Eye)

Video Modeling

Benefits of Video-Based Instruction

- Improves attention and appropriate behavior
- Improves retention of the presented information
- Increases opportunity for positive skill practice
- Increases independence and self-reliance
- Increases motivation to learn the skills

Steps when Using Video-Based Instruction

1. Identify the target skill(s)
2. Select learning cues
3. Select video equipment
4. Select the video model
5. Create the video
6. Select and arrange the setting
7. Monitor progress
8. Fade

1. Identify the Target Skill(s)

- Know your students, develop baseline
- Traditional vs. ecological assessments
- Meeting developmental milestones vs. being an active participant in the class and the community

2. Select Learning Cues

- Break down motor skills into critical elements/ cues
- Ensure they are age and skill appropriate
- Keep the cues simple yet accurate and organized

Examples of Learning Cues: Standing Long Jump

- Younger Learners:
  - Bend knees
  - Swing arms back
  - Bring arms above head
  - Land on two feet
- Older Learners:
  - Bend knees
  - Swing straight arms back
  - Lean forward and push off toes
  - Bring arms above head at takeoff
  - Bring arms down before landing
  - Land on two feet

3. Select Video Equipment

- Equipment is needed to:
  - record the skill cues
  - create the videos, and
  - present the video to the student.
- Consider:
  - Instructional objectives associated with the task
  - Features of equipment needed to complete task
  - Resources available to purchase the equipment
  - Which equipment will be appropriate for the learner

4. Select the Video Model

- Collect baseline data
- Factors to consider when selecting video-based instructional strategy:
  - Physical education goals
  - Complexity of the skills
  - Time needed to learn the skills
  - Degree of skill acquisition
  - Student characteristics (e.g., an attention span)
  - Model characteristics (age, gender, ethnicity, skills)

5. Create the Video

- Create the raw footage
- Edit the video for your purpose
- Publish the video

5. Create the Video
Create the Raw Footage

- Commercially produced programs/videos
- Create 3-5 videos of the same skill
  - Vary settings and models for generalization
- Recording in real time vs. a self-contained setting

5. Create the Video
Edit the Video for Your Purpose

- Choose your editing device – computer or mobile devices
- 15-60 seconds in length
- Include narrations, mark-ups, and voiceovers

Apple Mobile Devices
Selected Apps for Video Editing

	Splice Free/$3.99	Splice together HD photos and videos in an amazingly simple way. Add music tracks from your iPod library, sound effects, transitions, borders, effects (like Ken Burns, slow motion and fast forward), trim video and audio, narrate with your own voice, and much more.
	iMovie $4.99	Designed for the Multi-Touch screen, iMovie puts everything you need to tell your story at your fingertips. Browse and play projects in the Marquee view. Make a movie in minutes by adding video, photos, music and sound effects.
	Coach's Eye $4.99	Shoot video with the recorder or drop video in from other Apps. Analyze the video in slow motion or fast speeds. Pause video at specific moments and use drawing tools to emphasize body positions. Save analysis and share with others.
	Pinnacle Studio $12.99	Former AVID. More functional than iMovie but also more difficult. You can cut audio. More to do but also more to learn.

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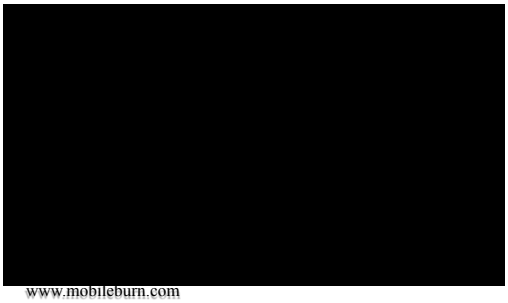
Video Editing with iMovie on iPad



www.mobileburn.com

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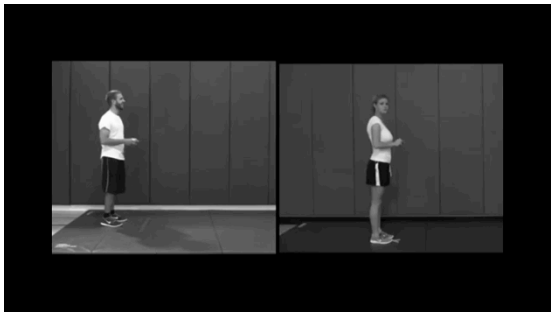
Video Editing with the Coach's Eye on iPad

- http://www.youtube.com/watch?v=-jRVzBjc7zg

Video Feedback with a Peer Model
Using Coach's Eye on iPad



5. Create the Video
Publish

- Using a mobile device vs. a computer
- Convert the video for your device
- Transfer the video (iTunes, dropbox, USB stick, iPad camera connection kit)
- Create a folder on the device for each student

Publish
Convert the Video

- Get your program to convert a video – HandBrake, WinX Video Converter for Mac
- Convert the video to the desired format (e.g., iPad)
- Tip: Save it where you can easily find it

Publish
Transfer the Video with iTunes

6. Select and Arrange the Setting

- Limit time between viewing the video and performing the skill
- Presenting the video in natural vs. self-contained setting
- Frequency of video viewing

7. Monitor the Progress

- Continue to monitor your student progress
- Use both qualitative and qualitative measures
- Collect more than just pre and post data
- Attempt to reach maximum proficiency based on curriculum and student goals
- Continuously assess a student's mental fatigue and boredom

8. Fade

- When performance is consistent, fade the use of video technology.
- Gradually decrease viewing time and increase practice time
- Use intrinsic and extrinsic motivators

Challenges with Video-Based Modeling

- Some learners do not want to be videotaped
- Parents may not want their children videotaped
- Technology approval process in the school
- Learning curve to create videos and transfer them
- Availability of the equipment for all students
- Updating and managing the the equipment
- Using technology may increase sedentary activities

Thank you for your time!

Questions?

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