

# A Comparison of the Effectiveness between Traditional and Video Modeling Strategies on Motor Skill Assessments

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## Introduction

- Children with Autism Spectrum Disorder (ASD) have been shown to possess relative strengths in processing visual stimuli as opposed to verbal stimuli (Tissot & Evans, 2003).
- Instructional strategies that use visual means and presentations are recommended over the traditional (verbal) instruction.
- The effectiveness of video modeling has been demonstrated with social skills, verbal and communication skills, and play skills among children with ASD (Ayres & Langone, 2005; Bellini & Akullian, 2007) but has been used limited in physical activity and motor skill research.

## Purpose

To examine the effectiveness of video modeling strategies compared to traditional instructions on motor skill performance among children with ASD.

## Methods

### Participants

- 19 children (ages 3 to 16)
  - 10 participant with ASD (ages 11-16)
  - 9 participants without disabilities (ages 3-10)
- The participants were recruited from the local community in the Pacific Northwest in the United States
- Diagnosis of ASD was confirmed through parental report

Table 1. Descriptive Summary of Participants

Group	Sample Size	Age	# of males	# of females
ASD	10	12.3	9	1
TD	9	7.3	5	4

Note. ASD=Autism Spectrum Disorder, TD= Typically Developing

## Video Modeling

- Each TGMD-3 skill presented by video on an iPad
  - Investigator demonstrated each skill and prompted child to try it themselves



Figure 1. Video Modeling Skills

## Procedure

- Two trials of the TGMD-3 administered by the study investigator for each participant
  - Traditional condition
  - Video Modeling condition
- TGMD-3 assessments took place at the student's school or OSU campus
- Each trial of the TGMD-3 was videotaped to be coded later on

## Total Time of Test

- There were statistically significant differences in the test time among conditions for both groups,  $F(1,18) = 22.34, p < .01, \eta^2 = .55$ .

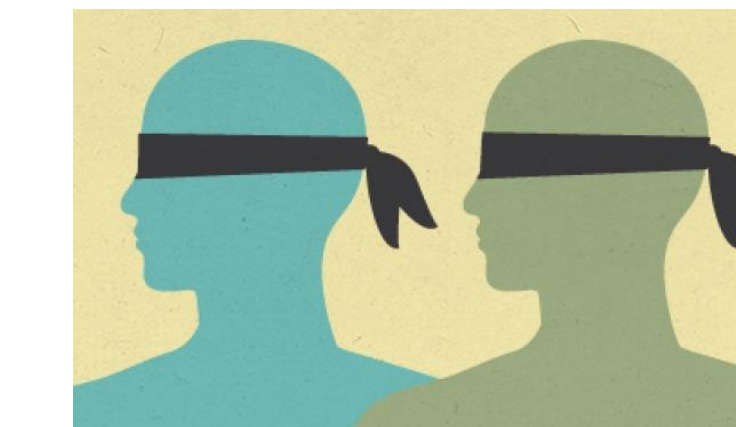
Table 2. Descriptive Summary of the Duration of Tests

Group	Mean	SD
ASD-Live	16.29*	4.35
ASD-Video	19.51*	5.43
Control-Live	13.10*	2.40
Control-Video	15.54*	2.68

Note. Mean is measured in minutes

## Data Analysis

- Research assistants were blind to the condition of each performance
- Data was analyzed using a 2x2 (group by condition) repeated measures ANOVA
  - Total Time of Test
  - Total Gross Motor Score



## Results

### Total Gross Motor Scores

- Results demonstrate there were changes in total gross motor scores between conditions for both groups, although the differences were not statistically significant.

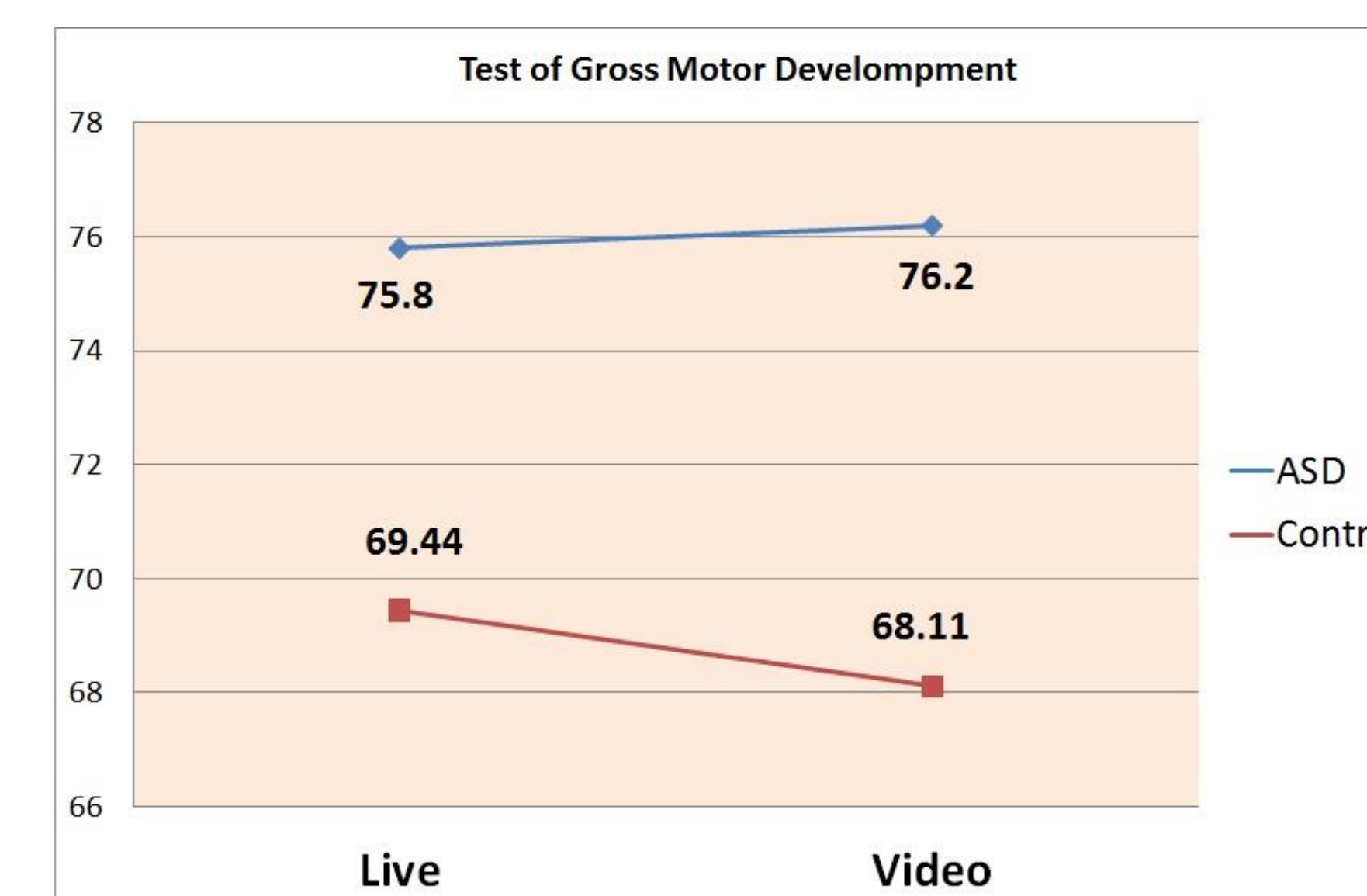


Figure 2. Total Gross Motor Scores

Table 3. Descriptive Summary of Total Gross Motor Scores

Group	Mean	SD
ASD-Live	75.80	7.50
ASD-Video	76.20	10.09
Control-Live	69.44	19.56
Control-Video	68.11	19.38

## Discussion and Summary

- Video Modeling procedures are longer in duration than the traditional condition for both groups.
- Though not statistically significant, raw data shows there is an increase in gross motor scores from live to video modeling for children with ASD, and a decrease in gross motor scores from live to video modeling for children without disabilities.
- Potential reasoning for insignificant outcomes:
  - Small sample size
  - Are the children attending to the videos on the iPad?
  - Age-appropriate skills
  - Previous studies did not blind raters. Like the present study, future studies should blind raters in order to reduce bias toward one condition.
- Further research is needed to provide more insight and reasoning for or against video modeling in motor assessment settings for children with ASD.

### Acknowledgments

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## Test of Gross Motor Development-3 (TGMD-3) (Ulrich, in press)

- TGMD-3 is a standardized motor skill assessment which evaluates 13 different locomotor and ball skills (e.g. run, gallop, overhand throw, one-hand dribble)
- Participants asked to perform each skill twice

