

# Teaching Style and Arm Muscle Strength Effects on Shot Put Learning

Research examining how teaching methods and physical strength impact student performance in shot put athletics





# The Problem

## Low Performance


Students struggle with shot put technique and distance

## Teaching Methods

Monotonous command-style instruction lacks variation

## Physical Differences

Varying arm muscle strength affects student outcomes

An illustration on the left side of the slide shows a teacher in a red jacket and black pants, standing on a red court and pointing towards a black ball suspended in a net. Three students are seen from behind, watching the teacher. The background features a large, stylized red and white mountain range under a red sky.

# Two Teaching Approaches

## Command Style

- Teacher-centered instruction
- Direct demonstration
- Step-by-step guidance
- Immediate correction

## Reciprocal Style

- Peer-to-peer learning
- Student feedback system
- Collaborative observation
- Active participation





# Research Design

01

## Field Experiment Method

2x2 factorial design with 22 middle school students

02

## Variables Tested

Teaching style and arm muscle strength as independent factors

03

## Performance Measurement

Shot put technique and distance as dependent variables

# Key Findings

1

## Reciprocal Style Wins

More effective overall than command style

2

## Interaction Effect

Teaching style effectiveness depends on muscle strength

3

## Strength Matters

High strength students benefit more from reciprocal style

### Research Results

Time taken before seen and in deep display

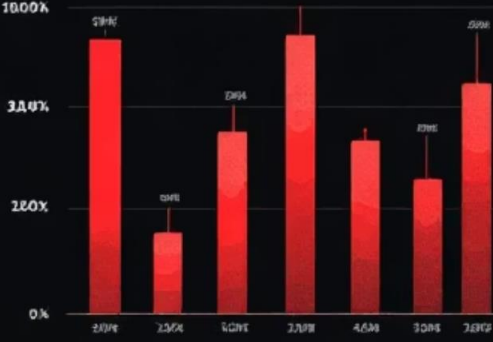
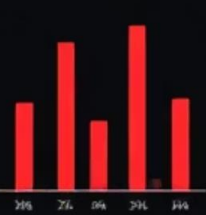
Nowmarts

76% More new features  
Current release 1.18.3.22

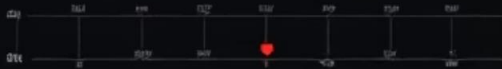


Conficction

77% More new features  
Current release 1.18.3.22



### Research Resultts



Current data used

755

Total data points

45%

Current data points compared to total

Contacts

254 45%

Current data points compared to total

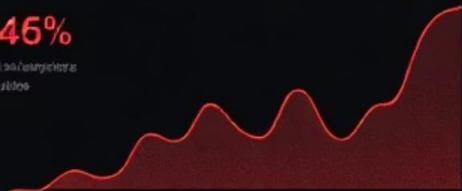
### Research Results

Current data used

71.46%

Current data points compared to total

Current data points



Current data used

127%

15%

Current data points

Current data used

37

373%

Current data points

Current data used

70

123%

Current data points

### Research comarch results



# Practical Applications



## High Arm Strength Students

Use reciprocal teaching for peer feedback and active learning



## Low Arm Strength Students

Apply command style for direct instruction and technique focus



## Adaptive Teaching

Match teaching method to student physical capabilities





# Conclusion

"Teaching effectiveness in shot put depends on matching instructional style to student arm muscle strength"

**Reciprocal style generally more effective**

**Command style better for weaker students**

**Adaptive teaching maximizes learning outcomes**

