

Commonalities of the Throws

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Ultimate Goal of the Throws

- To apply as much force as possible through as long of a range of motion as efficiently possible.

Overview

- Common General Concepts Across Athletics
- Technical Commonalities of the Throws
- Creating a Common Model
- Implementation of Coaching Strategy
- Questions

Common General Concepts

General Concepts-

There are several key concepts that are common to all athletic endeavors

General Concepts Across Athletics

- Balance and Positioning
- Temporal Considerations (Rhythm)
- Order of execution

Balance and Positioning

- Postural integrity
 - Head Alignment
 - Pelvic neutrality
 - Turning
 - Core Strength
 - Proprioception

Balance Continued

- Center of Mass
 - Changes according to body position
 - Can be outside body
- Conservation Strategies
 - Base of Support
 - Lowering
 - Opposing limbs
- Efficiency of movement
 - Postural integrity and conservation of balance are key factors

Temporal Considerations

- Overcoming inertia
 - Slow to fast with good positioning
- Uniform Acceleration
 - Shift through the gears

Order of execution

- Order in which human movement occurs
 - Sequential firing
- Large and proximal joints initiate
- Small and distal follow
- i.e. Vertical leap

Technical Commonalities

Phases of Throwing

- Preparation
- Power Position
- Delivery/Recovery

Preparation

- Glide/Rotation/Approach run
- Designed to provide momentum and velocity to thrower and to the implement
 - Newton's Second Law
 - Elite throwers do not let the implement stop
- Moves the thrower to correct delivery position
 - Foul line, toe board, etc
- Path of the implement is never straight line
 - Path of athlete, i.e. 100m

Power Position

- Foot Position
 - Stagger-Toe to instep
 - Ball of the foot or flat foot?
- Weight Distribution
 - Majority of weight over back foot
 - Rear leg under COM
- Shoulder/hip separation
 - Keeps implement “back”

Delivery

- Ultimate position that the implement leaves the thrower/implement system
- Positioning dictates:
 - Height of release
 - Angle of release
 - Implement positioning
 - Aerodynamics
- Follow through/Projection
 - Where do limbs stop

Recovery

- Strategies used to prevent a foul
 - i.e. switching feet in the ring, follow-through on runway

Additional Technical Commonalities

- Weight Transfer
 - Strategy used to elongate duration of force application on the implement
 - Weight moves from the back leg to front leg

Additional Technical Commonalities

- Blocking
 - Stopping of the non throwing side in order to increase velocity of the implement
 - Can help to preserve balance and positioning

Additional Technical Commonalities

- Turning
 - Oscillations occur in the hips, torso, arms and legs
 - Takes place proximally to distally
 - Provides force application to the implement
 - Squares thrower to sector for proper delivery position

Additional Technical Commonalities

- Extension
- Limbs extend proximally to distally
- Lower body:
 - Vertical force application
 - Turn initiates movement, extension follows
- Upper body:
 - Horizontal force application

Additional Technical Commonalities

- Separation
 - All throwers should be closed in some way
 - Refers to shoulder girdle angle vs hip angle
 - Elongates path of force application
 - Promotes torque in the mid section

Additional Technical Commonalities

- Free Arm Action
 - Extends and traces a path for the implement
 - Speeds up the implement
 - Sets up the upper body for block

Additional Technical Commonalities

- Stretch Reflex
 - A stretched muscle provides a harder contraction
 - Example: Pectorals can act as a rubber band

Creating a Throwing Model

Creating a Throwing Model

- Shot Put/Discus/Javelin delivery systems have their roots in the Double Pivot drill.
- Utilize the drill to teach the skill or rehearse the skill
 - Use throughout the year

Step 1 –Set up and Posture

- Assume the stance
- Line up feet
- Step out
- Saddle up

Step 2—Weight Shift

- Tap/Tap

Step 3—The Turn

- Start with upper body 90 degrees from sector
- Pivot body from torso with weight shift
 - Feet turn in synchronicity
- Front turns and foot grounds
 - Quad is flexed
 - Establishes lower body block
- Back knee closes to midline of body
- Tap of rear leg still exists

Step 4—Full Drill

- Begin with shoulders at 180 Degrees
- As proficiency increases, minimize pause

Upper Body Considerations

- Upper body timing can be taught with full drill
 - Cone/Bowling Pin—relationship to COM
 - Block THEN Deliver
- As pivot takes place, non-throwing arm opens
- Upper body block then occurs with the lower body

Variations of the Double Pivot

- Does not need to be event specific
 - Teaching a skill
 - Bilateral
- Varying implement
 - Cone/Bowling pin-far from COM
 - Shot Put/Med Ball- close to COM
- Dynamic additions
 - Hop/mini glide/crossover
- Weight Room adaptations
 - Specific strength—Barbell
 - Small plyo box/toe board

Implementation of a Coaching Strategy

Throws

- Each event 2-3x per week
- 15-30 repetitions
- Early season: 2 or more technical sessions with cones/pins/med balls
- As season progresses, utilize varied implements less
 - Skill acquisition

Weight Room

- Utilize the weight room for more than conditioning
- TEACH movements and apply them to each event

Specific Weight Room Exercises

- Explosive Triple extension
 - 1-2x per week w/ 48-72 hrs between
 - Olympic lifts/Jumps
- Strength Triple extension
 - 1-2x per week w/ 48-72 hrs between
 - Powerlifting Movements
- Body Building/Ancillary
 - Either GS day or spread out
- Core/Rotary/Forearms(grip)/Calves
 - Address each day

Identify Strategy for Multiple Throws Athletes

- Identify Training Age
- Most HS Athletes are younger than you think!
- Part → Whole → Part
 - Introduce Skills
 - Incorporate into full throw
 - Take a needs assessment

Strengths vs Weakness

- Primary vs secondary events
 - Work toward equality
- Needs assessment
 - Odds are that similar technical faults occur across all of the events
- Make your weaknesses into your strengths!

Final Note: Focus of Practice

- Work the commonalities during each practice
- Some of your best shot put practices you never pick up a shot put!

Questions?



Thank You &
Happy Holidays

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