The Art and Science of Coaching Track and Field Athletes

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Summary

The ability to successfully coach an athlete involves both a science and an art or individual needs based approach. Every coach will have a different philosophy on how to create a program for each individual athlete to reach their optimal performance. However, top coaches always balance science and the art of addressing the individual athletes needs. I have had the great pleasure to work and learn from Brett Willmott, the Coach of the Track and Field team at SUNY Potsdam. Over the past weeks I overlooked and helped coach the training both in and out of the weight room of the SUNY Potsdam Men's and Women's Track and Field athletes. Several topics such as sprint mechanics and the techniques that go into javelin throws, long jumps, and high jumps were learned. What is extremely special about athletics is how different each athlete is. I took note of how each athlete performed on a high intensity day, after a high intensity day, and after a regeneration/recovery day. With the balance of an individualized art and science-based approach, athletes will be able to recover more efficiently. This will allow them to produce more power and speed, improve their ability to learn, and overall increase performance because of their ability to train consistently. I am excited to apply and share the knowledge I have learned from this experience into the programming for my future athletes.

Goal

Continue to learn from my peers and
constantly expose myself to new environments
to help me
become the best strength and conditioning
coach I can be for my athletes.

The Art

Person FIRST, athlete second

COMMUNICATE and build TRUST to create BUY IN: The best results come with maximal intent. This cannot be done without athlete buy in.

Teach patience and empower with KNOWLEDGE: Create a culture where teammates are coaching each other. Without understanding the why behind a movement, maximal intent cannot be reached. Independence is the greatest gift a coach can provide.

Have FUN: Consistency is the name of the game. Avoid burning out the athletes and create an environment where both fun and getting the job done coexist in a balanced manner.

The Science

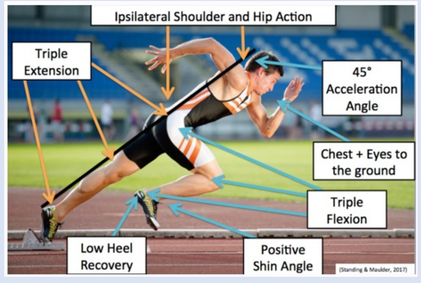
TECHNIQUE: Form dictates function. Poor form will increase an athlete's risk of injury and decrease their performance.

ENERGY SYSTEMS TRAINING: Train all systems but determine what intensities and durations fit your athletes needs the most. That is the bucket you will fill the most.

PROGRESSIONS, REGRESSIONS, ADAPTABILITY: Not all athletes are built the same, or are at the same level, and/or may be returning from an injury or simply not feeling their best that day. Learn to adapt and always have a plan b,c,d,e,f,g…

Sprint Mechanics

Being strong is cool, but how fast can you move?
Acceleration vs Max velocity



ACCELERATION

Forward lean
-first step body angle at ~45
-stronger athletes may have lower angles

Parallel shins and body
-Attack back at the ground

Toe up
-Creates a pre-stretch Achilles tendon (more use of the stretch shortening cycle)

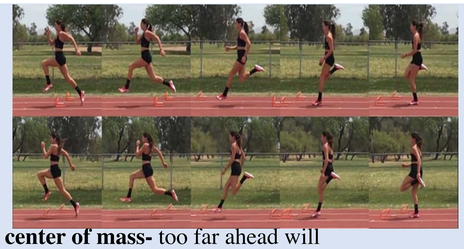
Low ground clearance- higher the foot, the longer the ground contact time

Head facing down- body angle drives the head down, we want a neutral head to create a straight line running from the head down through the shoulder, hips, knee, ankle and foot

Big Arms- Use the shoulders to help drive the momentum of the athlete forward

Slower ground contact times
-More time to apply force
-More strength based

MAX VELOCITY



Upright posture

Relaxed shoulders- fluid movement

High knees- ~90 degree to the body

Contact ground just in front of the center of mass- too far ahead will cause a breaking force and increase risk of injuries such as hamstring strains

Toe up
-Creates pre stretch of the Achilles (stretch shortening cycle). More prepared to striking the ground again

Heel to butt recovery

Longer strides
-So much momentum going forward, each step is continuing that momentum trying to attain maximum velocity

Fast ground contact times
-Relies on elastic stretch shortening cycle (a lot of the Achilles tendon)

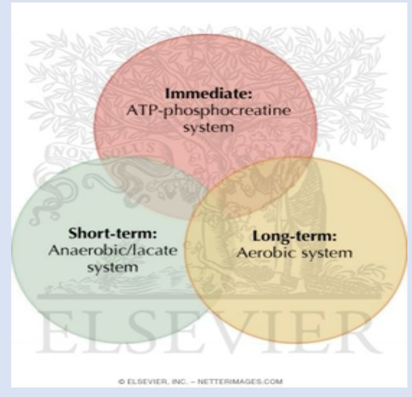
Energy System Training

All three work together- simultaneously

Emphasize one more over the other based on event (Sprinter, Javelin thrower vs. 5k runner)

Power vs Endurance based athlete (fast twitch vs slow twitch muscle fibers)

Two main factors determine which energy system is put to work:
1) Intensity
2) Duration



TAKEAWAY

-Always have a WHY behind your programming
-Person FIRST, athlete second
-NEVER stop learning, empower with KNOWLEDGE
-Have FUN