Brain Coaching:
Physical literacy, decision-making, creativity and risk

Paul Jurbala & Brandy Tanenbaum
January 2017
Remember Tulo?
Volatility
Uncertainty
Complexity
Ambiguity
Success: “Technical skill and tactical fundamentals at speed, under pressure, while fatigued.”

... Physical literacy means accurate decision-making and performance (movement) under VUCA
So how do we coach the cognitive?
Deliberate play is foundational
“Playing with a purpose”
“Trial and error works much better”
Deliberate play

One group of children learned ball sports for 6 months and were encouraged to experiment; the other received explicit instructions and correction. Expert judges then assessed creativity in controlled game situations.

“Trial and error works much better”- Vickers’ “Decision Training”

1. Describe the decision the athlete must make.
2. Select an activity which trains the decision and skill in a competitive context.
3. Perform the activity: the coach uses 7 “decision tools” to structure and provide feedback:
   1. Variable practice
   2. Random practice
   3. Bandwidth feedback
   4. Questioning
   5. Video feedback
   6. Hard-first tactical instruction
   7. Modelling

### Windows & capacity

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<thead>
<tr>
<th>LTAD Stage</th>
<th>Active Start</th>
<th>FUN</th>
<th>Learn to Train</th>
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Development of Skills and Abilities Across LTAD Stages – from Biathlon Canada LTADM, 2006
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“Trial and error works much better”

• Adaptation ≠ learning. Visual feedback improves ST adaptation but for LT learning of new movements, proprioceptive feedback trumps visual feedback. (Roemmich et al., 2016, Current Biology 26, 2707–2716)

• Kicking accuracy: “…generalized explicit instructions have detrimental effects on performance, whereas the benefits of unguided discovery learning increase with the amount of practice undertaken and when performing under transfer conditions.” (Gredin & Williams, 2016, Journal of Motor Behavior, Vol. 48, 86-97)

• Take aways: Experimentation! Bandwidth training!
So if “trial and error works much better”…

- By definition, learning means trying something you don’t know how to do. Learning = risk.
- Consider the positive benefits as well as negative consequences of risk. Bigger risk = bigger reward?
- You have to create a safe environment for error (failure)!
  - Deliberate play (uncoached)
  - Bandwidth training...leave them alone as long as they are trying
  - Reduce audience effects...praise experimentation
Brain Coaching: Physical literacy, decision-making, creativity and risk

Brandy Tanenbaum & Paul Jurbala

Canadian Sport for Life Summit | Gatineau, QC
January 2017
Champions aren't made in gyms. Champions are made from something they have deep inside them—a desire, a dream, a vision. They have to have the skill, and the will. But the will must be stronger than the skill.

-Muhammad Ali
Resilience

...the **process** of adapting well in the face of adversity, trauma, tragedy, threats, or even significant sources of stress - such as family and relationship problems, serious health problems, or workplace and financial stressors.

The American Psychological Association
**VUCA**

**complexity**

*Characteristics:* The situation has many interconnected parts and variables. Some information is available or can be predicted, but the volume or nature of it can be overwhelming to process.

*Example:* You are doing business in many countries, all with unique regulatory environments, tariffs, and cultural values.

*Approach:* Restructure, bring on or develop specialists, and build up resources adequate to address the complexity.

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**volatility**

*Characteristics:* The challenge is unexpected or unstable and may be of unknown duration, but it’s not necessarily hard to understand; knowledge about it is often available.

*Example:* Prices fluctuate after a natural disaster takes a supplier off-line.

*Approach:* Build in slack and devote resources to preparedness—for instance, stockpile inventory or overbuy talent. These steps are typically expensive; your investment should match the risk.

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**ambiguity**

*Characteristics:* Causal relationships are completely unclear. No precedents exist; you face “unknown unknowns.”

*Example:* You decide to move into immature or emerging markets or to launch products outside your core competencies.

*Approach:* Experiment. Understanding cause and effect requires generating hypotheses and testing them. Design your experiments so that lessons learned can be broadly applied.

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**uncertainty**

*Characteristics:* Despite a lack of other information, the event’s basic cause and effect are known. Change is possible but not a given.

*Example:* A competitor’s pending product launch muddles the future of the business and the market.

*Approach:* Invest in information—collect, interpret, and share it. This works best in conjunction with structural changes, such as adding information analysis networks, that can reduce ongoing uncertainty.
VUCA

- **V**olatility: Change Nature, Change Dynamics, Change Rate & Speed
  - Drivers: Change Nature, Change Dynamics, Change Rate & Speed
  - Effects: Risks, Instability, Flux
  - Demands: VISION - Take Actions, Probe Changes

- **U**ncertainty: Unpredictability, Potential Surprises, Unknown Outcomes
  - Drivers: Unpredictability, Potential Surprises, Unknown Outcomes
  - Effects: Direction, Paralysis Due To Data Overload
  - Demands: UNDERSTANDING - Wider Understanding, Different Perspectives

- **C**omplexity: Tasks Correlation, Multifaceted Effects, Influencers
  - Drivers: Tasks Correlation, Multifaceted Effects, Influencers
  - Effects: Unproductive Dualities
  - Demands: CLARITY - Key Focus, Flexible, Creative

- **A**mbiguity: Ideal vs. Actual, Misinterpretation
  - Drivers: Ideal vs. Actual, Misinterpretation
  - Effects: Induce Doubt & Distraction, Lapses In Decision Making, Hurt Innovations
  - Demands: AGILITY - Decision Making, Innovation
Redefining risk

- Potential negative outcomes

+/-% ACTIVITY

+ Potential positive outcomes
Exploring risk in play

Journal of Adventure Education and Outdoor Learning
Vol. 9, No. 1, June 2009, pp. 3–21

Characteristics of risky play

Ellen Beate Hansen Sandseter*
Queen Maud University College of Early Childhood Education (DMMH),
Trondheim, Norway

What is the Relationship between Risky Outdoor Play and Health in Children? A Systematic Review

Mariana Brussoni,1,2,* Rebecca Gibbons,3 Casey Gray,4 Takuro Ishikawa,1 Ellen Beate Hansen Sandseter,5 Adam Bienenstock,6† Guylaine Chabot,7† Pamela Fuselli,8‡ Susan Herrington,9‡ Ian Janssen,10,11‡ William Pickett,11‡ Marlene Power,12† Nick Stanger,13† Margaret Sampson,14 and Mark S. Tremblay4,15

Paul B. Tchounwou, Academic Editor
Benefits of Risky Play:

- Better risk detection/awareness and management skills
- Improved motor and spatial skills
- Increased self-esteem
- More independence
- Better conflict resolution skills
- Ability to negotiate decisions about substance use, relationships and sexual behaviour during adolescence

FAIL
FIRST ATTEMPT IN LEARNING
"Sports don’t build character, they reveal it."

- John Wooden
"Sports don’t build character, they reveal it."

- John Wooden
Thank you

For more information:

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