

# Hockey Alberta

Skill Development and Learning--Youth  
Rob Weddell M.Ed.,BPE, PN1

---

---

---

---

---

## Outline

- 1) Defining motor learning
- 2) Culture for learning
- 3) Growth & Development considerations  
for motor learning and performance



---

---

---

---

---

## What is Motor Learning?



How do we know a skill has been learned?



Smarter Every Day, Published April 24, 2015

---

---

---

---

---




---



---



---



---



---




---



---



---



---



---

What are some examples of hockey practice activities structure to train the **“Read & Plan”**?

High-Tech Vision Training of Tennessee / Edgar Martinez / Mariners  
[https://www.youtube.com/watch?v=8r\\_mckwmiHJ](https://www.youtube.com/watch?v=8r_mckwmiHJ)

---



---



---



---



---

# Read -- Plan -- Do




---



---



---



---



---

# Read -- Plan -- Do




---



---



---



---



---

## Stages of Motor Learning: Teaching Support

**Cognitive Phase:**  
What to do? When to do it?  
How to do it?

- Self-talk
- Inconsistent Motor Plan
- Tentative & uncoordinated movement

**Teaching Keys:**

- Establish Teaching Cues
- Reinforce "correct" movement/ positive feedback



**Associative Phase:**  
Motor Program developed

- more effective and efficient movement
- Engaged problem solving
- Ability to detect errors

**Teacher Keys**

- Reinforce Teaching Cues and proper form
- Reduce Feedback (ask Q's)
- Provide progressive challenges with success

**Autonomous Phase:**  
Expert performance.

- Automatic and effortless
- Performs skill in many different settings
- Accurate self assessment and error detection

**Teacher Keys**

- Increase challenges
- Motivation (improvements at this stage are small)

---



---



---

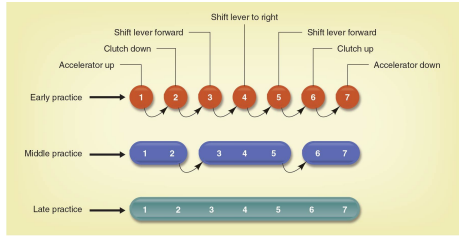


---



---

## Gear Shift Analogy & Stages of Learning



Copyright © 2008 by the National Health and Medical Research Council. All rights reserved.

---



---



---



---



---

## Culture For Learning:

### To Learn you need Participation

- 70% of kids drop out of sports before their high school graduation.
- Only 15% leave because they feel they are not good enough.
- Almost 70% leave because they were not having fun, or due to problems with the coach.
- Injuries cause 30% to give up sports.

Research from University of Florida

---



---



---



---



---

## Physical literacy

is the...



**Why are you learning the skill in the first place?**

...to be **active for life**

---



---



---



---



---

## Confidence and Learning

- What builds confidence?
- How does your planning influence player confidence?
  - Practice structure
  - Game day



Dr. Haley Perlus Published Sept 2014 by International Youth Conditioning Association



---

---

---

---

---

---

---

## Personal Confidence in a Team Game



---

---

---

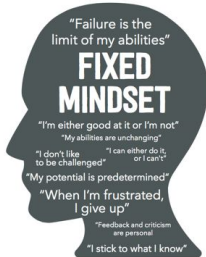
---

---

---

---

## Motivation to Learn Skills & Growth Mindset



Developing a Growth Mindset is a core future skill. BY KERRYNN KOHL ON FEBRUARY 20, 2017 <https://www.talenttalks.net/developing-growth-mindset-core-future-skill/>

---

---

---

---

---

---

---

**Growth & Development considerations for motor learning and performance**




---



---



---



---

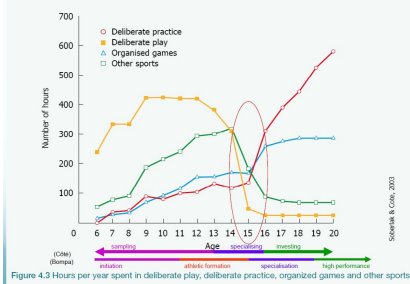


---

- Deliberate Practice =**
- purposeful structured activity
  - the motivation is to achieve a specific goal to improve

- Deliberate Play =**
- Designed to maximize fun
  - intrinsically motivating

**Developmental Histories of Elite Athletes**




---



---



---



---



---

**Contextual Interference (depress performance)**

**Elaboration Hypothesis**

—Discover distinctiveness among skills

**Forgetting Hypothesis**

—Generate the solution on every trial

**Retrieval practice**

—Repeated retrieving of movements (long term memory)

---



---



---



---



---

### Block Practice

- a)  $4 \times 4 =$
- b)  $4 \times 4 =$
- c)  $4 \times 4 =$
- d)  $4 \times 4 =$
- e)  $4 \times 4 =$
- f)  $4 \times 4 =$
- g)  $4 \times 4 =$
- h)  $4 \times 4 =$
- i)  $4 \times 4 =$

### Variable Practice

- a)  $4 \times 1 =$
- b)  $4 \times 2 =$
- c)  $4 \times 4 =$
- d)  $4 \times 3 =$
- e)  $4 \times 5 =$
- f)  $4 \times 4 =$
- g)  $4 \times 3 =$
- h)  $4 \times 1 =$
- i)  $4 \times 2 =$

### Random Practice

- a)  $4 \times 4 =$
- b) How many sides does a triangle have?
- c)  $4 \times 3 =$
- d) If a square is cut in half what does it make?
- e)  $4 \times 4 =$



**Hockey skill practice examples?**

---

---

---

---

---

---

---

### G & D considerations for motor learning and performance

**Performance =**

**Physical Work Capacity**

(endurance, speed, strength, coordination, and flexibility)

+

**Exploitation Capability**

(skills, technique, and tactics)

*Which of these elements to the right are most important for hockey?*

Dr. Chris Brooks, University of Florida. The Science of Training Youth <https://www.coursera.org/learn/youth-sports/home/info>

---

---

---

---

---

---

---

### HOCKEY CANADA, LTPD

#### LEARN TO PLAY: MALE 9 - 10 and FEMALE 8 - 9

- best opportunity to learn and begin to master fine motor skills
- begin to transfer skills and concepts from practices to games.

#### LEARN TO TRAIN: MALE 11 - 12 and FEMALE 10 - 11

- most significant period for development
- window of accelerated adaptation to motor coordination.

#### TRAIN TO TRAIN: MALE 12 - 16 and FEMALE 11 - 15

- building an aerobic base, developing speed and strength and further developing and consolidating sport specific technical skills

<https://cdn.hockeycanada.ca/hockey-canada/hockey-programs/coaching/downloads/2018/2018-ltpd-overview-e.pdf>



---

---

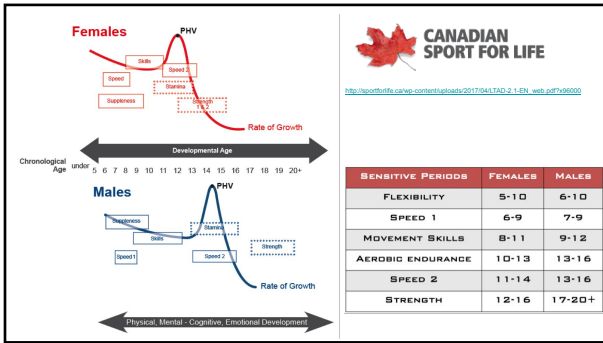
---

---

---

---

---




---

---

---

---

---

---

---

---

### Applications for the Pee Wee Hockey Player

**Stamina**

- Entering a sensitive period for aerobic capacity (before PHV)
- Progressive training of aerobic power as growth decelerates

**Suppleness (flexibility)**

- Sensitive period during childhood
- Note stress on muscles, ligaments and tendons during growth spurts.

---

---

---

---

---

---

---

---

### Applications for the Pee Wee Hockey Player

**Strength**

- Youth can benefit from resistance training
- Resistance training needs to be supervised by a certified trainer.

Focus on:

- Fundamental movements skills (**run, jump, hop, skip, leap, LAND, & squat, lunge, pull, press, plank**)
- Posture & form
- Progressions
- Appropriate activities- FUN

Myths and Facts about youth Training: By Mike Bracko <http://totobet.net.com/articles/myths-and-facts-about-youth-training-3953>  
 The truth about Kids and Resistance Training: By Eric Cressey <https://ericcressey.com/the-truth-about-kids-and-resistance-training>

---

---

---

---

---

---

---

---



## Applications for the Pee Wee Hockey Player

### Speed

Kevin Neeld, Long -Term Athletic Development Applications to Speed Training

#1 – With kids **younger than 12**, focus on the 3 E's: Exposure, Engagement, and Enjoyment.

#2 – During **periods of rapid growth** (typically starting around age 12), slow things down to speed things up.

#3 – When **height changes start to stabilize** (i.e. slower changes, starting around age 16), start to ramp up training intensity.

Kevin Neeld, Long -Term Athletic Development Applications to Speed Training  
<http://robertsontrainingsystems.com/blog/long-term-athletic-development-applications-to-speed-training/>

---

---

---

---

---

---

---

## Applications for the Pee Wee Hockey Player

### Skill

- By the age of 8, the brain of children is 90 to 95% fully developed.
- **Coordination improves as the nervous system (NS) matures.**
  - NS developed by age 12 ---coordination skills should be fully developed
  - **sensory input** by the vestibular, the visual and the proprioceptive systems continue to develop (15 to 16 years of age) - some effect on coordination ability
- **Kinesthetic sense** increases by almost 75% between the age of 10 and 11 years alone
- By 9 to 11 years, **reaction time, rhythm capabilities and balance** are almost fully developed.
- By age 11-12 children can become very efficient in their **interception skills.**

***“Superior performance of early maturing children is due in a large part to their physical size and not necessarily because they have superior talent.”*** (Dr Brook, University of Florida)

---

---

---

---

---

---

---

## Learning to Train Stage's Growth and Development Considerations For PE (approx. ages 8-12)

### General

- ✓ Children at this age have a **high degree of imagination**; being active is very important; they like to work, learn, and accomplish things
- ✓ They **want to act on their own**; do not like conventions or norms, accept the teacher as the leader but want to be involved establishing the rules and conditions governing the activity
- ✓ Still needs well **established routines** in daily activities
- ✓ Athletic or competitive **backgrounds vary greatly** with each student.
- ✓ **Interests in sport activities** is often high
- ✓ Participation in sports is often **influenced by friends** participation

---

---

---

---

---

---

---

### Learning to Train Stage's Growth and Development Considerations For PE (approx. ages 8-12)

#### Suggestions for Appropriate Activities

- ✓ **Sport skills development focus**
- ✓ Establish **guidelines for acceptable behaviour**, and act in a constant and **predictable manner**; however accept each child unconditionally.
- ✓ Modified scaled down equipment should be used; set up competitive games where **ability levels are matched**
- ✓ **Demonstrations** should be highly specific, simple and aimed at the achievement of a well-defined objective
- ✓ **Duration** of activities should be relatively short and exercise should change frequently

---

---

---

---

---

---

---

### Learning to Train Stage's Growth and Development Considerations For PE (approx. ages 8-12)

#### Suggestions for Appropriate Activities

- ✓ Focus on activities that are aimed at:
  - ✓ **developing agility, coordination, balance**;
  - ✓ encourage participation in a **variety** of sports and activities;
  - ✓ encourage the use of **right and left** hands and feet to enhance motor patterns and improve coordination
  - ✓ a good age to use games that encourage/ stress **speed**
- ✓ Activities should be adapted to encourage **interaction** between students, allow the student to demonstrate progress that he/ she has made and be **balanced with challenge and success**.

---

---

---

---

---

---

---

### Learning to Train Stage's Growth and Development Considerations For PE (approx. ages 8-12)

#### Suggestions for Appropriate Activity Focus

- ✓ Praise child frequently; **Feedback** should focus on one point (choose the most important one)
- ✓ Emphasize the following:
  - ✓ development of **confidence**,
  - ✓ **self-esteem**,
  - ✓ **peer interaction**,
  - ✓ **cooperation**,
  - ✓ having **FUN**,
  - ✓ putting winning and losing into perspective and **focusing on effort**.

---

---

---

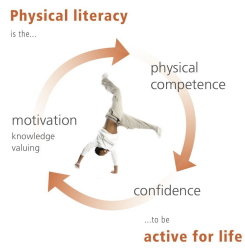
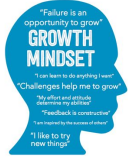
---

---

---

---

## Summary



---

---

---

---

---

---

## References

- Kevin Needl, Long -Term Athletic Development Applications to Speed Training <http://robertsporttrainingsystems.com/blog/long-term-athletic-development-applications-to-speed-training/>
- Dr. Chris Brooks, University of Florida. The Science of Training Youth <https://www.coursera.org/learn/youth-sports/home/info>
- Mike Bracko, Myths and Facts about youth Training. <http://ironthefire.com/articles/myths-and-facts-about-youth-training-3953>
- Eric Cressey, The truth about Kids and Resistance Training. <https://ericcressey.com/the-truth-about-kids-and-resistance-training>
- Canada Sports 4 life. <https://sportforlife.ca/quality-sport/long-term-athletic-development/>

---

---

---

---

---

---