

# PENZ conference 2016

## WHY GO CONTEMPORARY?

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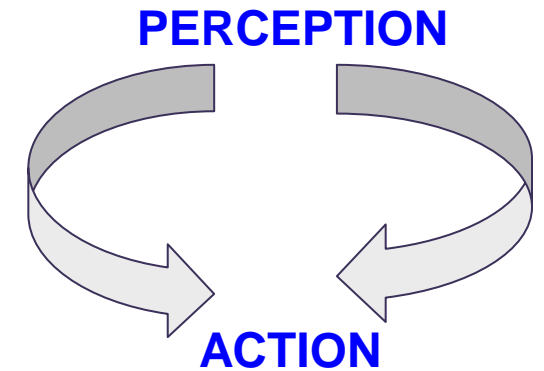
# Why?

- Mismatch between practice and theory
- Reading the Physical Educator Volume 47/3 November 2014 made WGHS curious: (Skill Acquisition for Senior School Physical Education: Up 'skilling' for the 21st Century – Margot Bowes)
- Feeling we were not adding value to the student learning from Level 2
- An authentic and practical way to view skill acquisition from a critical lens
- Read 'Dynamics of skill acquisition ' and starting a team inquiry into the knowledge
- Verity Sharland and I were very lucky to be able to work closely with Skate at AUT

# Some Background Theory

How do we learn movement skills?

- Ecological Psychology and Perception - Action Coupling
- Practice: The Environment is key



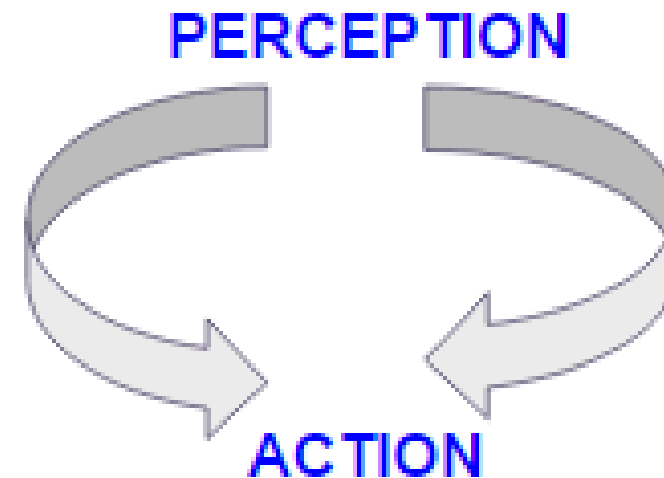
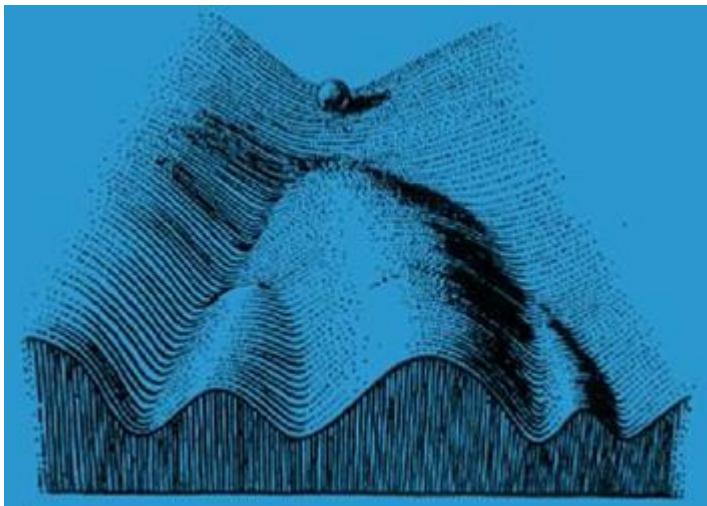
# Key Point

- Individual Differences mean that there is no such thing as:  
*“THE PERFECT MOVEMENT TEMPLATE”*
- Meaning: Repetitive drills DO NOT lead to expert performances  
(BUT might be good for confidence)



# Key Principles of Dynamical Systems Theory:

- Self Organisation
- Attractor Patterns
- Constraints-led approach





Practical time !

Let's engage with the theory -  
Play time !!



# Self Organisation

- By a process of exploration a student/athlete will self organise in order to achieve the task goal. Body Fits the skill
- Discovery Learning
- Inner Game Learning
- The nature of the instructions about the task goal are vital



# Attractor Patterns

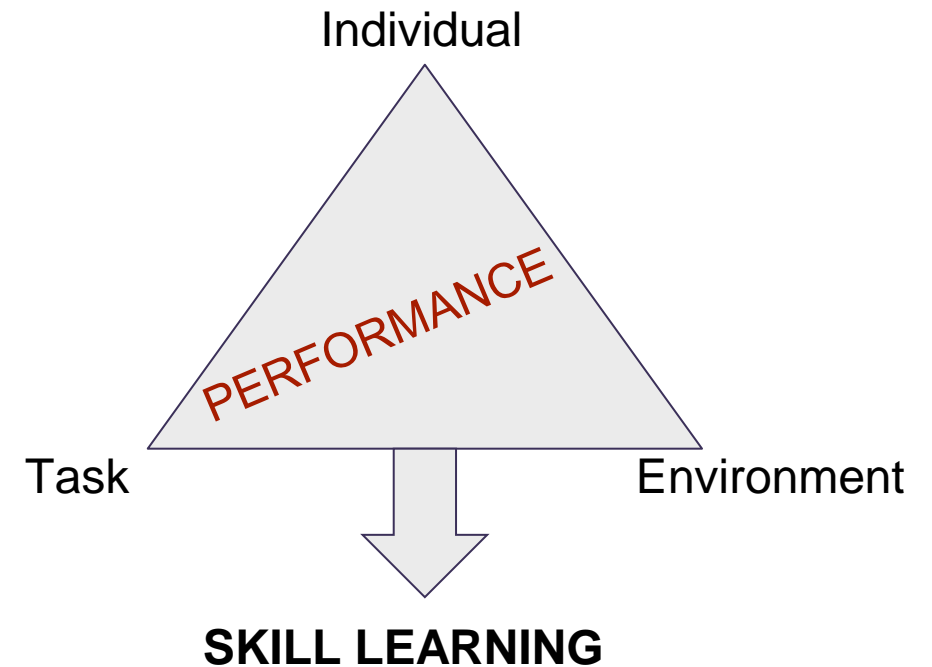
- How do we develop movement patterns?  
Individual biomechanical efficiency
- Movement patterns are loosely assembled...co-ordinative structures under constraints (Williams & Davids, 1999).
- Therefore Skilled performers are:
  - Adaptable and demonstrate functional variability





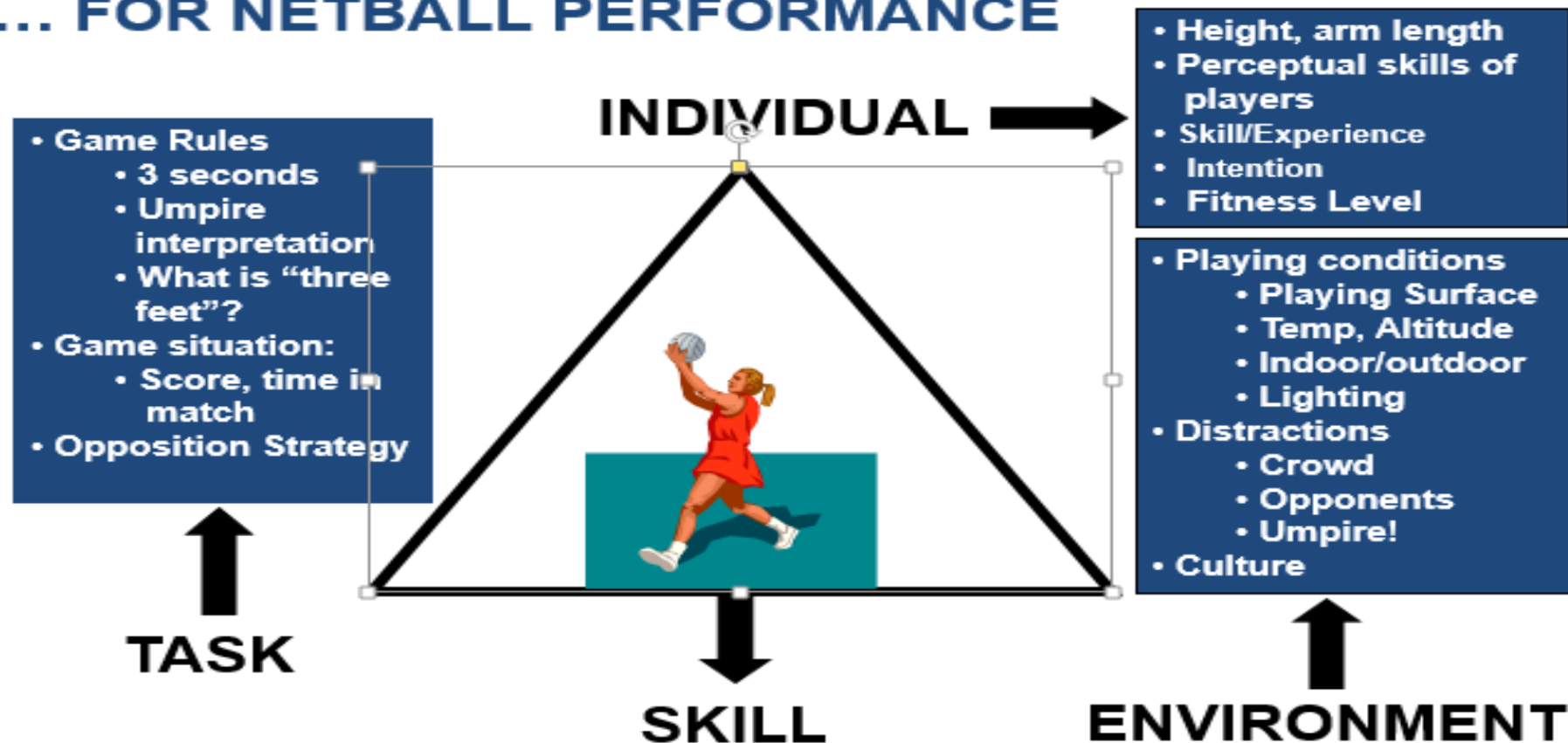
# Constraints

- Constraints are influential factors within the practice environment...
- Constraints are not necessarily negative influences on behaviour, but exemplify the way that movement system components are integrated to form specific types of functional organization (Chow, Davids, Button, Shuttleworth, Renshaw & Aurajo et al, 2006).



# A Constraints-Led Perspective

## A CONSTRAINTS-LED PERSPECTIVE ... FOR NETBALL PERFORMANCE



# Summary

- Skilled movements (or attractor patterns) EMERGE based on the individual, environmental and task constraints at any specific moment in time.
- People will SELF ORGANISE if they are given the chance to do so.



# How?

- Students followed two skill acquisition programmes. One used a traditional approach to skill acquisition and the other took a contemporary or Constraints-Led approach.
- Students completed reflections after each session
- Final assessment task for AS3.3 had questions that led them to compare and contrast between the two approaches

# What did we observe? Experience?

- Excited us as teachers to be doing something different, trying new approaches
- The content sat well with our teaching around thinking critically about 'one size fits all' approaches and the 'supposed perfect technique' (Critical evaluation in 3.2 and 3.3)
- Students engaged with the theory once they experienced it in a practical sense
- It allowed for authentic critical evaluation when comparing and contrasting between approaches. In the past answers have seemed somewhat forced in nature when comparing and contrasting between 'types of practice' for example



# Where to from here? : Level 3

- Most of our focus (and understanding!) initially was on manipulation of task constraints and this was easy to put into a practical setting.
- This year we placed more emphasis on the Perception – Action coupling knowledge. We will go further with this next year.
- Change the reflection questions to guide on deeper thinking around coupling and self-organisation
- We are developing confidence in creating activities that we think encourage performers to cope with variable environmental conditions
- We are still unsure as to how much/when/or if any actual 'instruction' and feedback would or should be given on things such as technique

# Conceptual Visualisation of skill acquisition

Jigsaw time !!

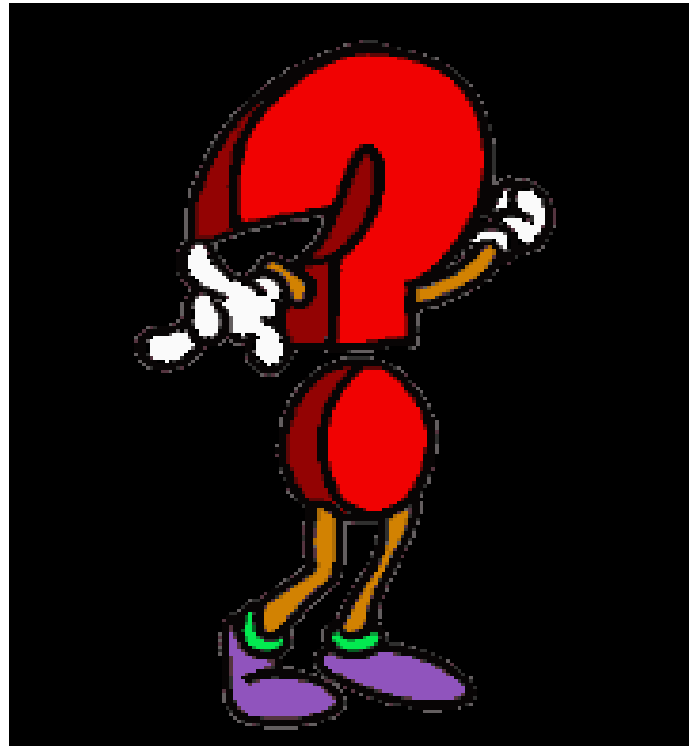


# Lets go Contemporary

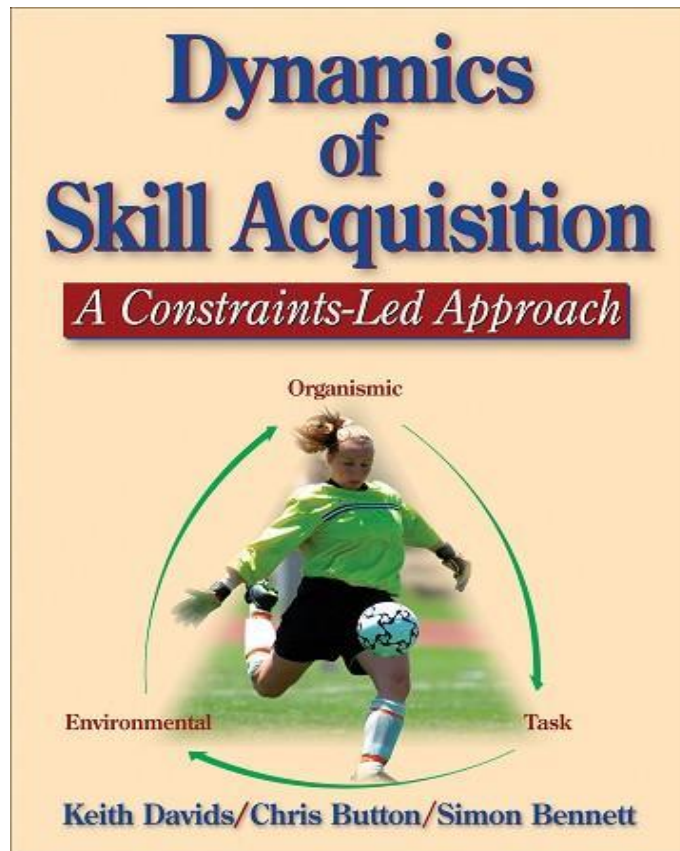
## E.G.

<i>Year and Level</i>	<i>The curriculum suggests students should be able to...</i>	<i>Linked to Achievement Standard</i>	<i>The following language is used in Achievement Standard</i>	<i>Traditional approaches to skill acquisition</i>	<i>Contemporary approaches to skill acquisition</i>
Yr 11, Level 6-7	<b>B1</b> Acquire, apply, and refine specialised motor skills by using the principles of motor skill learning. (Also B3)	1.6 ( <i>Demonstrate strategies to improve the performance of a physical activity and describe the outcomes</i> )	Use principles of motor skill learning to acquire, apply and refine practice Quality of practice, type of practice, amount of practice, tactics and strategies, levels of related fitness, level of motivation, goal setting	<ul style="list-style-type: none"> <li>· Frequently teacher directed (e.g. Gymnastics or street ball) with specific activities set to enable performance</li> </ul>	<ul style="list-style-type: none"> <li>· Movement variability</li> <li>· Self organisation</li> <li>· Attractor patterns</li> <li>· Coordinated movement</li> <li>· Learning = retention and transfer</li> </ul>

# Question and Answer time

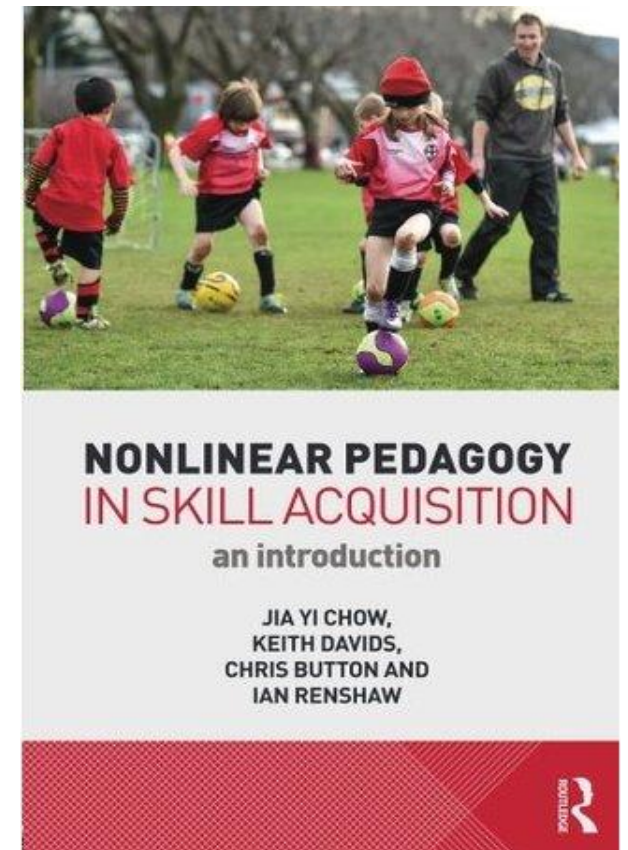


# Resources



**Great article to read:**

Renshaw, I., Davids, K., Shuttleworth, R., & Chow, J. (2009). Insights from Ecological Psychology and Dynamical Systems Theory Can Underpin a Philosophy of Coaching. *International Journal of Sport Psychology*, 40(4), 580-602. [Available to download online - QUT University](#)





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