

# The Role of the Performer-Environment Interaction for Developing Skill



**Dr Alan Dunton**  
[Alan.Dunton@MTU.ie](mailto:Alan.Dunton@MTU.ie)

 **@AlanDunton**  
 **@MSAIreland**



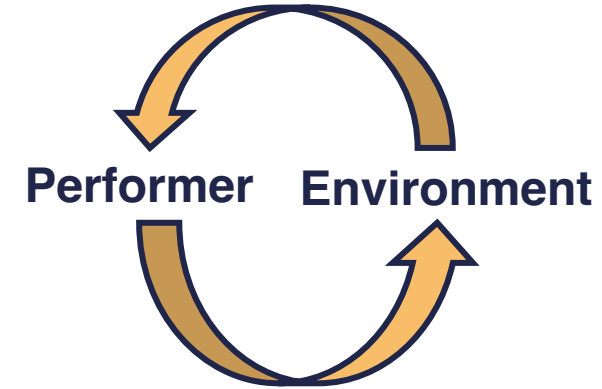
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# What is Skilled Performance?



***Skill is the Emergence of Functionally Adaptable Performance Solutions!***







***“No man ever steps in the same river twice, for it's not the same river and he's not the same man.”***

**- Heraclitus**



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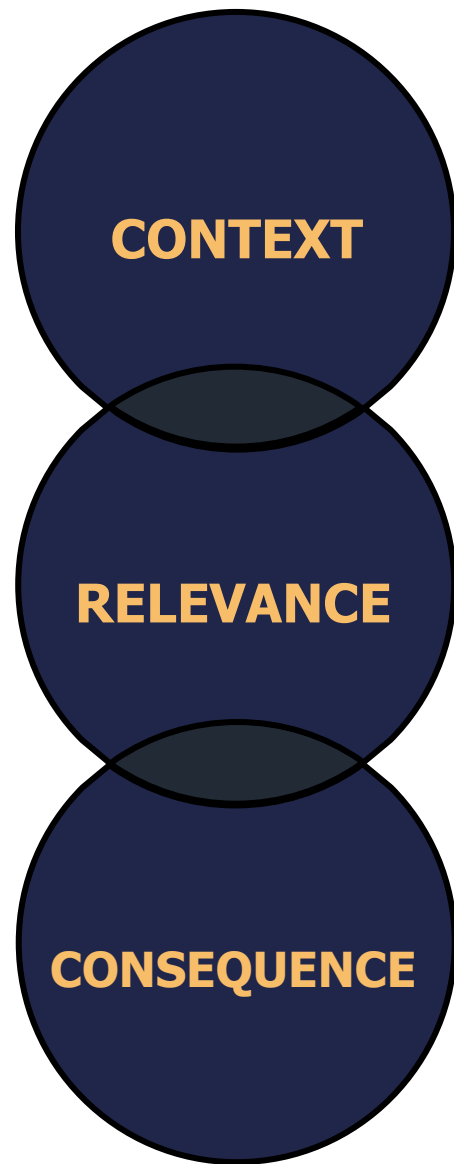
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**Inherent Variability  
Writing & 1.vs.0  
Activity Task**



# Key Elements for Session Design



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*(Edward Coughlan)*



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**Shooting Drills!**  
**Where is the**  
**Context?**



# Context

**“You will never become an Olympic swimmer by training in a bathtub, but you might be able to photograph optimal biomechanical positions”**



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# Why Context Matters



## Motor and Gaze Behaviors of Youth Basketball Players Taking Contested and Uncontested Jump Shots

Mariëtte J. J. van Maarseveen<sup>2,3</sup> and Raoul R. D. Oudejans<sup>1,2,3\*</sup>

<sup>1</sup> Faculty of Sports and Nutrition, Amsterdam University of Applied Sciences, Amsterdam, Netherlands, <sup>2</sup> Department of Human Movement Sciences, Amsterdam Movement Science, Vrije Universiteit Amsterdam, Amsterdam, Netherlands, <sup>3</sup> Institute of Brain and Behavior Amsterdam, Amsterdam, Netherlands



Contents lists available at ScienceDirect

Psychology of Sport and Exercise

journal homepage: [www.elsevier.com/locate/psychsport](http://www.elsevier.com/locate/psychsport)



Representative design: Does the addition of a defender change the execution of a basketball shot?



Adam D. Gorman<sup>a, b, \*</sup>, Michael A. Maloney<sup>a, c</sup>

<sup>a</sup> Movement Science – Skill Acquisition, Australian Institute of Sport, Canberra, Australia

<sup>b</sup> School of Health and Sport Sciences, University of the Sunshine Coast, Sippy Downs, Australia

<sup>c</sup> College of Sport and Exercise Science, Institute of Sport, Exercise and Active Living, Victoria University, Melbourne, Australia

ERGONOMICS, 2000, VOL. 43, NO. 10, 1651–1660



## Kinematic adjustments in the basketball jump shot against an opponent

F. J. ROJAS<sup>†\*</sup>, M. CEPERO<sup>‡</sup>, A. OÑA<sup>†</sup> and M. GUTIERREZ<sup>†</sup>

<sup>†</sup> Faculty of Physical Activity and Sports Sciences, University of Granada, Crtra. de Alfacar s/n 18071 Granada, Spain

<sup>‡</sup> Faculty of Human Sciences, University of Jaen, Spain

*Keywords:* Biomechanical analysis; Shooting; Opposition; Training.

# Context



**“You can't adapt to an environment you don't inhabit.”**

*Prof Keith Davids*



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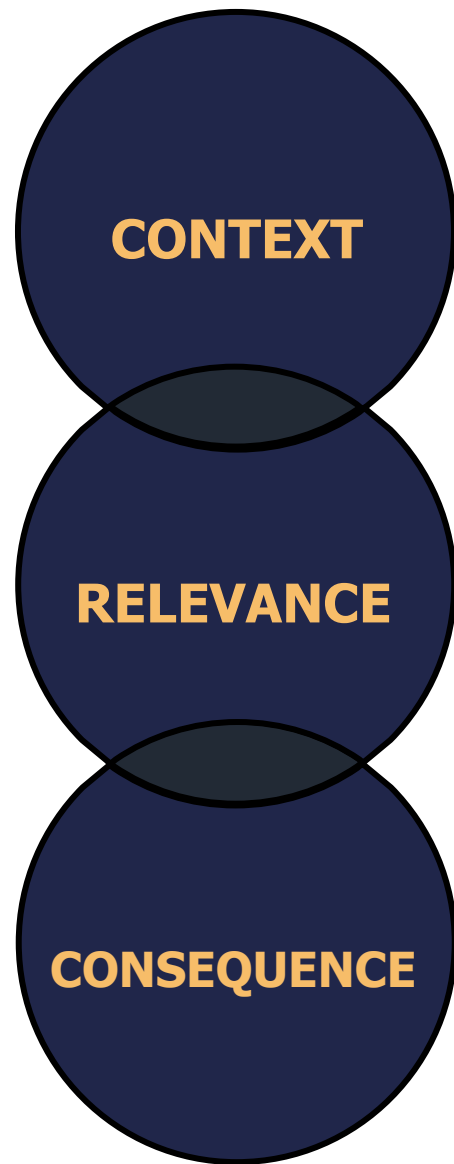


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**How Can We Provide  
The Appropriate Dose  
of Context in Training?**



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*(Edward Coughlan)*



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**Ball Handling /  
Free-Throw Practice  
Relevance?**



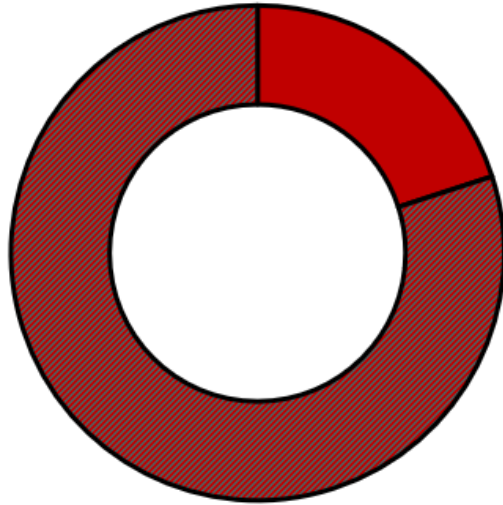
# Representative Dosage of Relevance





# Relevance

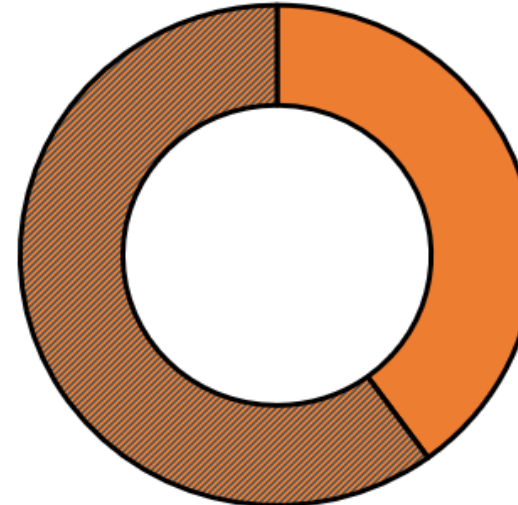
## Representative Practice Design



2 out of 10

Relevance  
Context  
Consequence

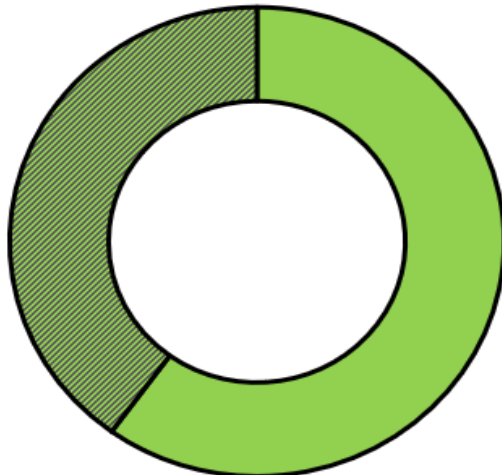
## Representative Practice Design



4 out of 10

Relevance  
Context  
Consequence

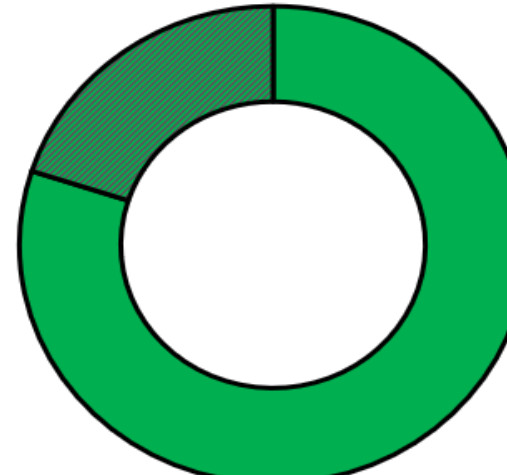
## Representative Practice Design



6 out of 10

Relevance  
Context  
Consequence

## Representative Practice Design

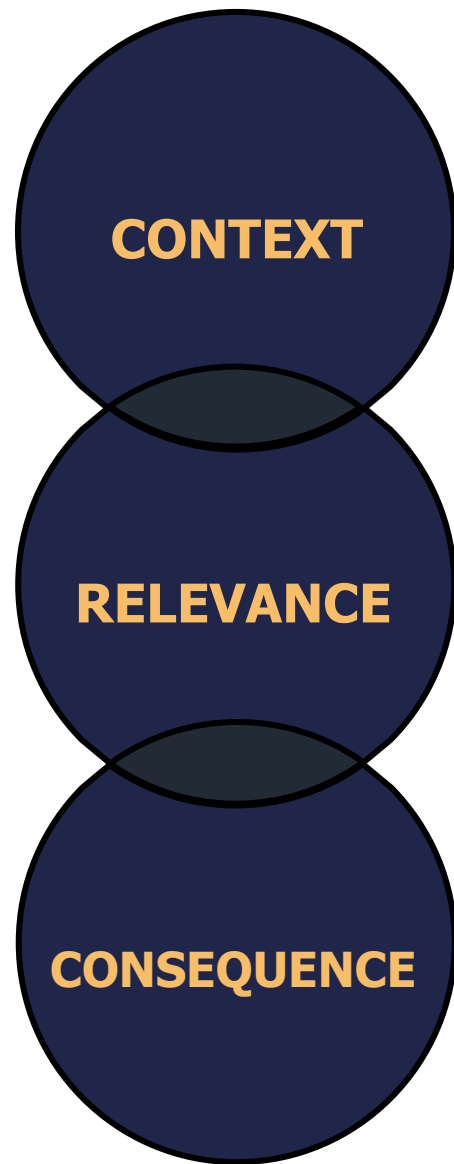


8 out of 10

Relevance  
Context  
Consequence

A hand holding a pencil points to a whiteboard with a question. The whiteboard is framed in orange and has a white background with a torn-paper edge. The question is written in orange text. The background of the slide is dark blue with white splatters.

**How Can You Scale  
Up the Relevance in  
Your Coaching?**



=



*(Edward Coughlan)*



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# Anxiety & Performance



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**3 vs 3 – Create a  
Consequence to  
Induce Anxiety**

# Appropriate Consequences



Simon Stone ✓  
@sistoney67

Concede a goal, face the consequences.



5:52 PM · Jul 11, 2022 · Twitter for iPhone

1,188 Retweets 675 Quote Tweets 14.3K Likes

**Using Exercise  
Punishments as the  
Consequence in  
Training May have  
the Completely  
Opposite Impact  
Than that Intended**



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# Why Consequences Matter

Human Movement Science 49 (2016) 36–46

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Human Movement Science

journal homepage: [www.elsevier.com/locate/humov](http://www.elsevier.com/locate/humov)



frontiers in  
PSYCHOLOGY

ORIGINAL RESEARCH ARTICLE  
published: 28 January 2011  
doi: 10.3389/fpsyg.2011.00008



## Quiet eye training facilitates competitive putting performance in elite golfers

Samuel J. Vine, Lee J. Moore and Mark R. Wilson\*

Sport and Health Sciences, University of Exeter, Exeter, UK

Psychological Research (2017) 81:1004–1019  
DOI 10.1007/s00426-016-0791-0



ORIGINAL ARTICLE

## The interaction between practice and performance pressure on the planning and control of fast target directed movement

Jonathan E. Allsop<sup>1</sup> · Gavin P. Lawrence<sup>2</sup> · Robert Gray<sup>3</sup> · Michael A. Khan<sup>4</sup>


Full Length Article

Perceptual-motor learning benefits from increased stress and anxiety

Brenton Hordacre<sup>a</sup>, Maarten A. Immink<sup>b,\*</sup>, Michael C. Ridding<sup>a</sup>, Susan Hillier<sup>b</sup>

<sup>a</sup>The Robinson Research Institute, School of Paediatrics and Reproductive Health, University of Adelaide, Adelaide, SA 5000, Australia

<sup>b</sup>School of Health Sciences, University of South Australia, GPO Box 2471, Adelaide, SA 5001, Australia



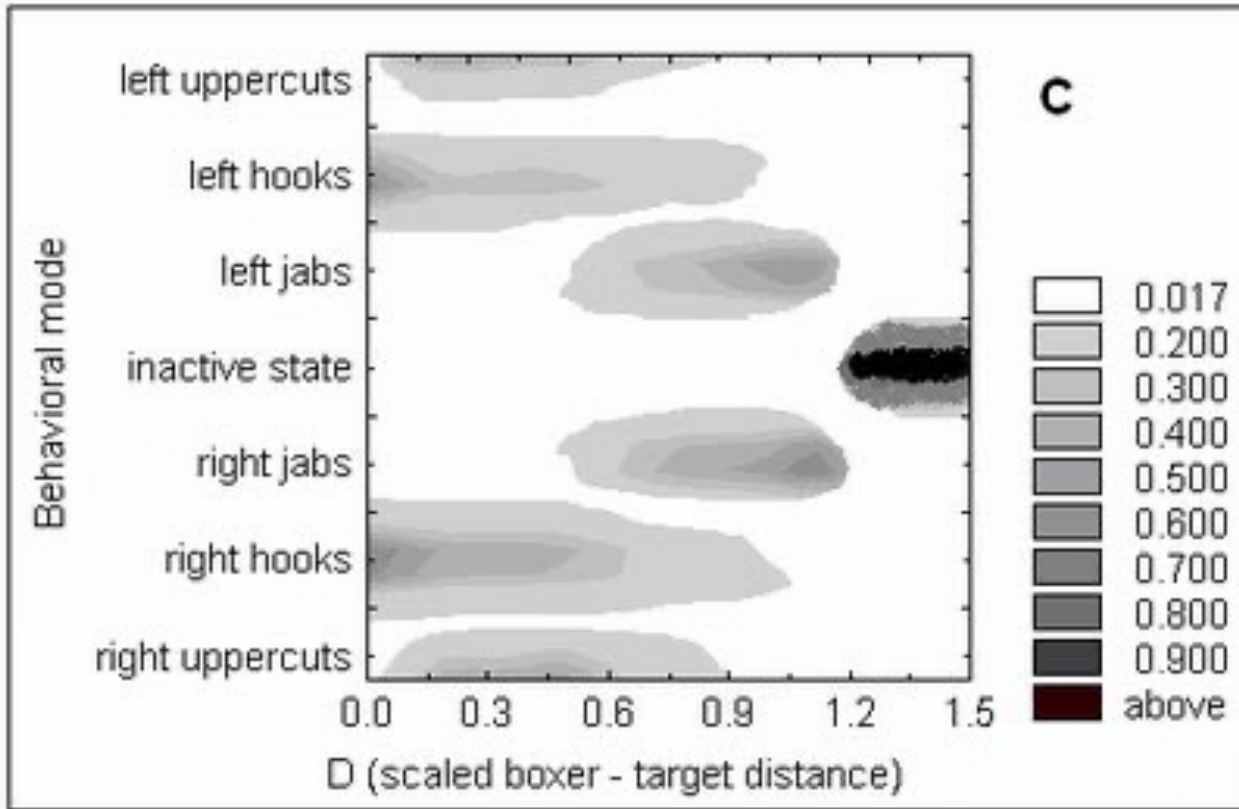
**How Can You  
Appropriately Apply  
Consequences?**





# Metastability & Constrain to Afford

# Metastability



*(Hristovski, Davids, Araujo & Button 2006)*

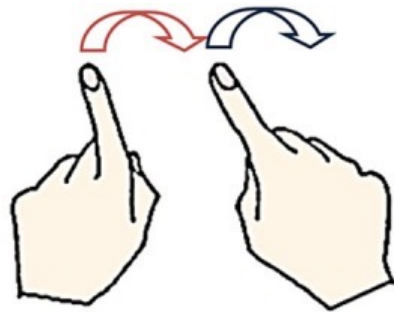


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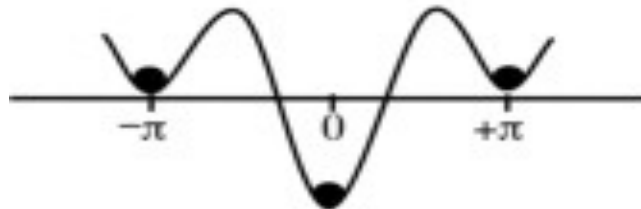
# Transition Between Stable States

Walk

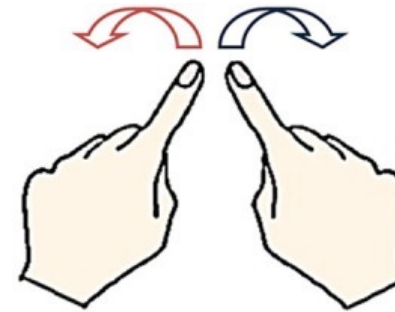


Anti-phase coordination

$$a < 4b$$

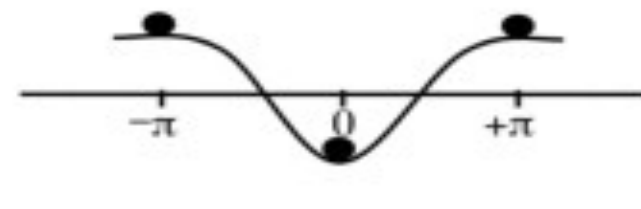


Jog



In-phase coordination

$$a \geq 4b$$



Increasing frequency



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**Coaches: Identify 3  
Options Available to  
a Point-Guard**



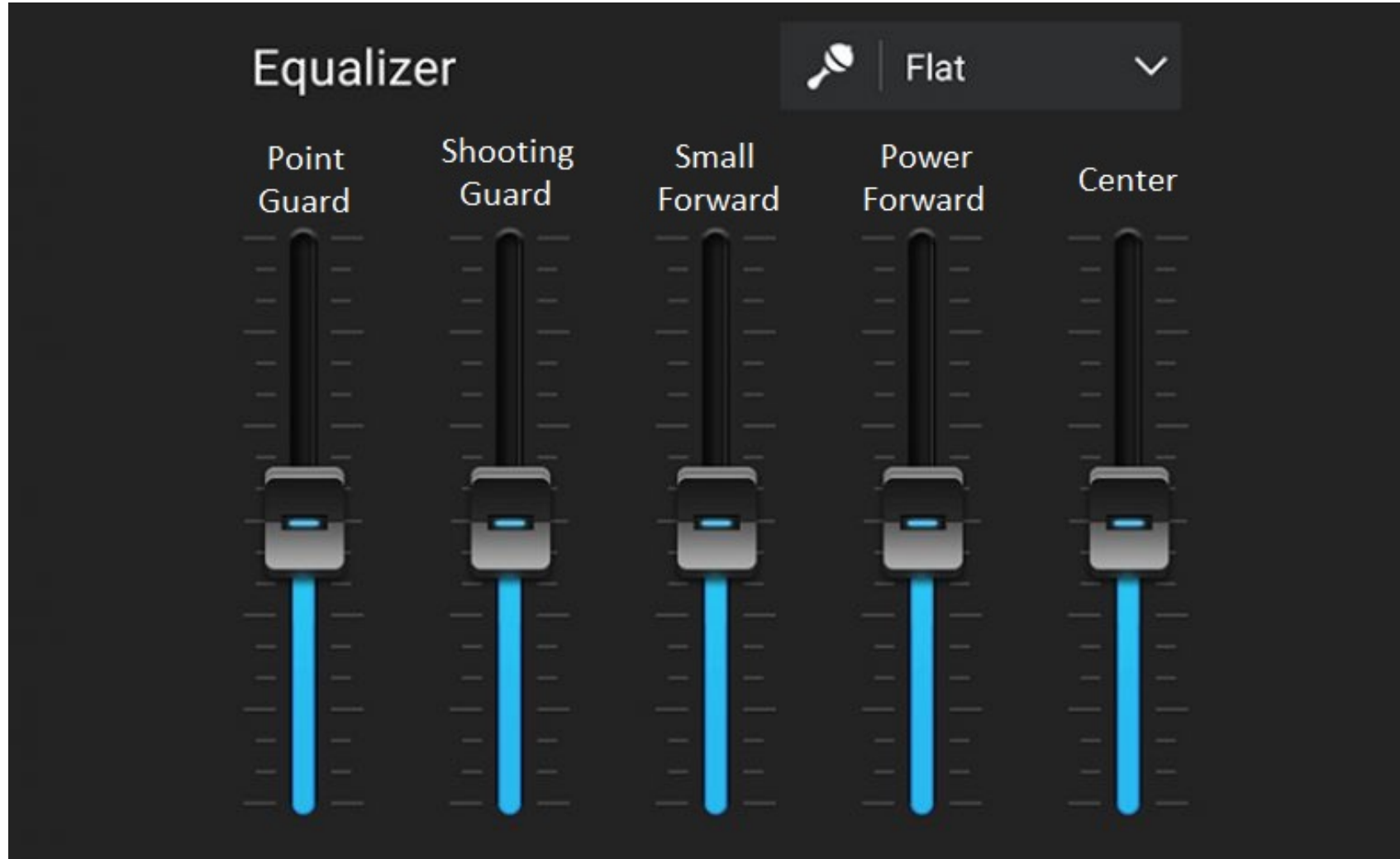
**Coaches: Identify  
Options Available to  
a Centre**





# **Deceptive Actions to Create Space**

# Volume Up

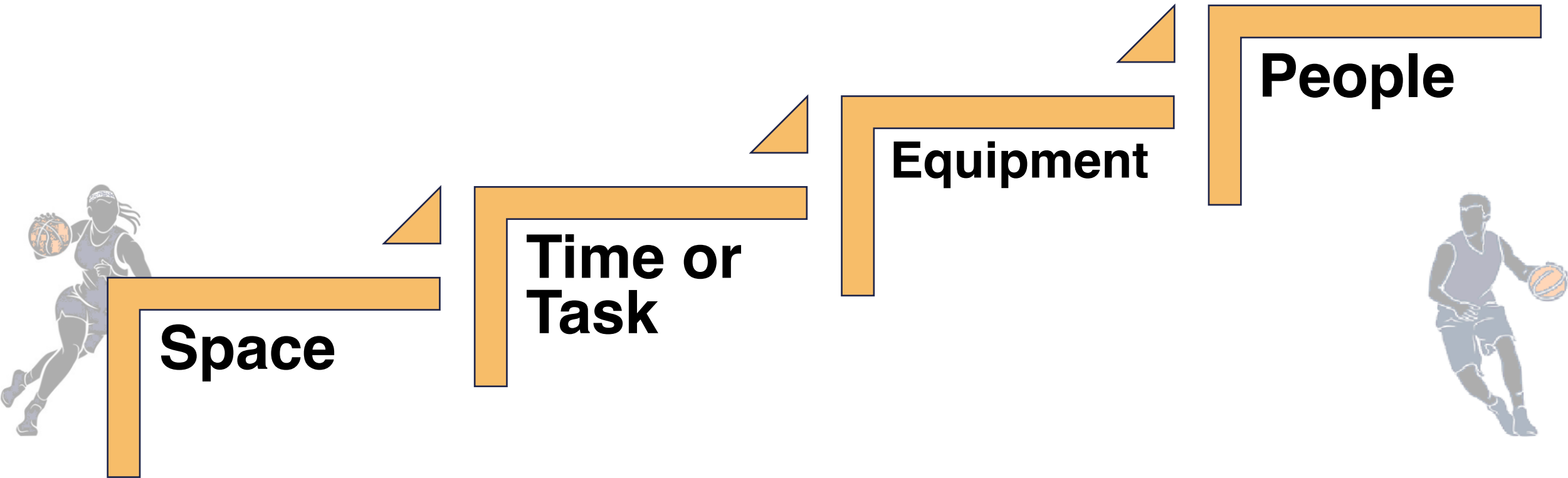


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# STEP Guide to Applying a CLA



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