



# Integration of skill acquisition support in Paralympic sport

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## Skill Acquisition?

↑ literature in mainstream sport (e.g., Baker & Farrow, 2015; Davids et al., 2008)

Few learning studies in Paralympic sport (Dehghansai et al., 2017; Oudejans et al., 2012)

Reliance on existing theory (Paulson & Goosey-Tolfrey, 2016)

Issues and challenges in application... (Pinder et al., 2015)

Multi-medal scope & impact...

Baker, J., & Farrow, D. (2015). *Routledge handbook of sport expertise*. Routledge.

Davids, K. W et al. (2008). *Dynamics of skill acquisition: A constraints-led approach*. Human Kinetics.

Dehghansai, N. et al.. (2017). A systematic review of influences on development of athletes with disabilities. *Adapted Physical Activity Quarterly*, 34(1), 72-90.

Oudejans, R.R. et al. (2012). Training visual control in wheelchair basketball shooting. *Research Quarterly for Exercise & Sport*, 83. 464-469.

Paulson, T., & Goosey-Tolfrey, V. (2016). Current perspectives on profiling and enhancing wheelchair court-sport performance. *International Journal of Sports Physiology and Performance*, 24, 1-32.

Pinder, R. et al. (2015). *Issues and challenges in developing representative tasks in sport*. In Baker, J. & Farrow, D. (Eds.) *The Routledge Handbook of Sports Expertise*. Routledge, London, pp. 269-281.





# Skill acquisition support...





# Theoretical approach...

## Constraints-led approach (CLA)\*

Based on principles of a non-linear pedagogy (see Chow et al., 2015)

Integrating 'Design thinking' (Pinder & Renshaw, under review)



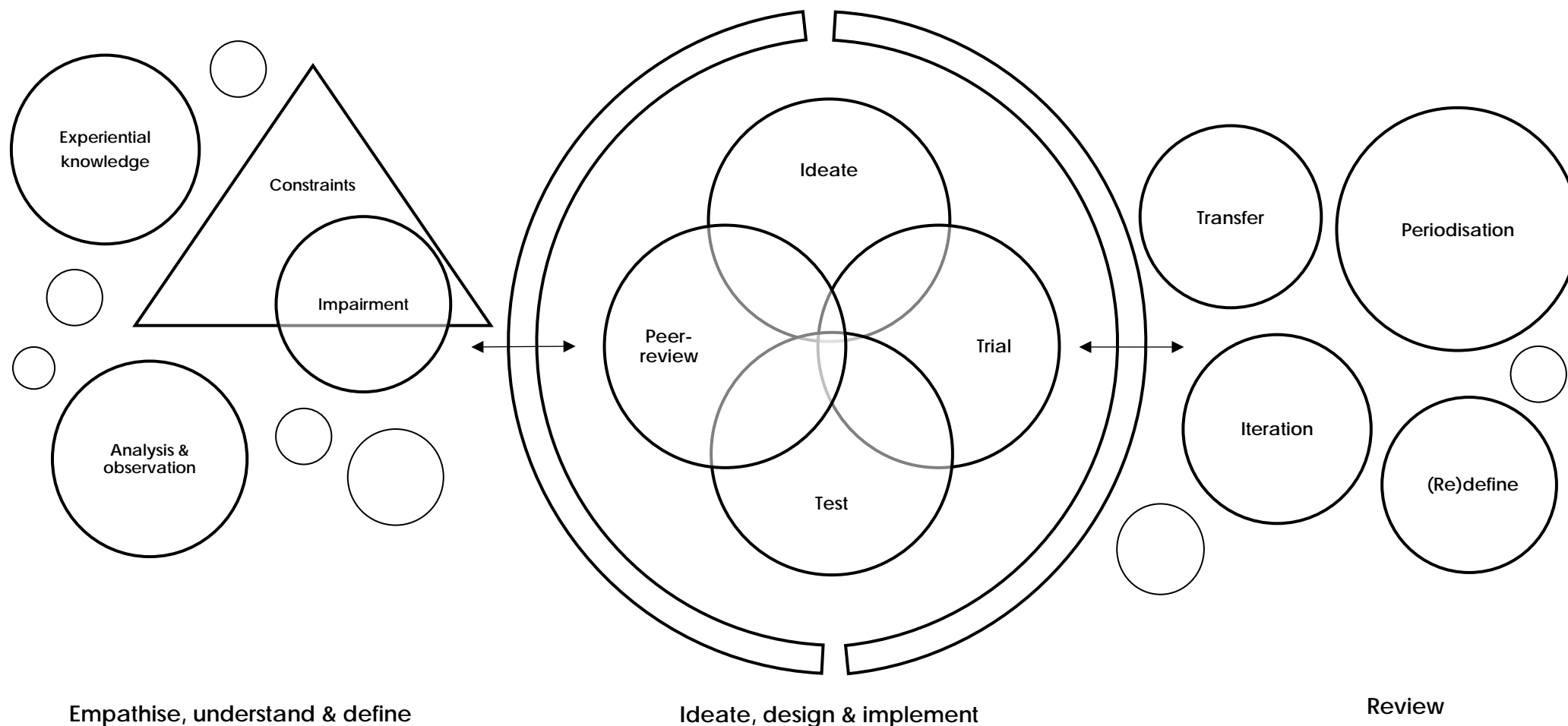
Chow, J. Y., Davids, K., Button, C., & Renshaw, I. (2015). *Nonlinear pedagogy in skill acquisition: An introduction*. Routledge.  
Pinder, R.A. & Renshaw, I. (under review). An application of constraints-led pedagogy in Para-sport. *Physical Education & Sport Pedagogy*

\*For an introduction and overview of the constraints-led approach see: Davids et al., (2008). *Dynamics of skill acquisition: A constraints-led approach*. Human Kinetics.





# 'Learning design thinking'





# T36 Long Jump...

## Key points

- Individual (creative) approaches can aid big shifts in skill learning
- Well designed CLAs allow for simplification (decomposition?) and effective transfer

## Outcome

- Paralympic Gold
- PB & PR (5.62m)







# Class 11 Table Tennis...

## Key points

- Role of variability in task design
- Impact of simulation in preparation for competition
- Unique designs

## Outcome

- Paralympic Silver
- First medal for Australian Para Table Tennis in 32 years



## Flexible approach to coach & athlete support

Support and compliments coach needs (see Cooper & Allen, 2017)

Further enhance creativity (Taylor et al., 2015)

Facilitate transfer of theory & research (Burkett, 2013)

Coach/ sport driven questions (e.g., Haydon et al., 2017)

Adaptable framework (Pinder & Renshaw, under review)





# Summary...

## Opportunities

Enhance performance

Case-study approach: optimizing skill learning

Collaboration

## Challenges

No recipes

Skill acquisition as science and an art

Resources

"The training environment should reflect the complexities that the competitive environment demands... skill acquisition support has helped and challenged our team to achieve this in tennis. "

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