



# KEYNOTE SPEECH

## STRUCTURING LEARNING DESIGNS IN CHILDHOOD THROUGH THE LENS OF ECOLOGICAL DYNAMICS

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This communication will address how key ideas in Ecological Dynamics can be applied to didactically structuring learning designs in childhood (Button et al 2020; Chow, 2013; Rudd et al 2021). Under this framework, one important idea is that learning entails a reciprocal relationship between perception and action, and that learners should be guided to identify and use available affordances (opportunities for action) in the learning environment (Renshaw & Chow, 2019). To draw delegates' attention to this conceptualization of learning, this communication will present experiments, delivered in play-based forms, focused on the perception of stepping and jumping affordances of pre-school children. Ecological dynamics rationale supports also the idea that learning designers should promote learners' self-discovery and self-organization through constraints manipulation (Davids et al., 2008, Renshaw et al., 2010). This idea will be brought to life by presenting a recent study that investigated whether learning how to ride a conventional bicycle in childhood can be shaped by specific task constraints related to the kind of training bicycle used. This presentation and examples are expected to provide some insights to both research and pedagogical practices steering to better understand and facilitate learning and development in childhood.

**Keywords:** Ecological Dynamics, affordances, constraints, motor learning designs, childhood.

*Button, C., Seifert, L., Chow, J. Y., Araújo, D. & Davids, K. (2020) Dynamics of skill acquisition: An ecological dynamics approach, (2nd Edition edn) (Champaign, IL, Human Kinetics). Chow, J. Y. (2013) Nonlinear learning underpinning pedagogy: Evidence, challenges, and implications. Quest, 65(4), 469-484. Davids, K., Button, C. & Bennett, S. (2008) Dynamics of skill acquisition: A constraints-led approach, (Champaign, IL, US, Human Kinetics). Renshaw, I. & Chow, J. Y. (2019) A constraint-led approach to sport and physical education pedagogy. Physical Education and Sport Pedagogy, 24(2), 103-116. Renshaw, I., Chow, J. Y., Davids, K. & Hammond, J. (2010) A constraints-led perspective to understanding skill acquisition and game play: A basis for integration of motor learning theory and physical education praxis? Physical Education and Sport Pedagogy, 15(2), 117-137. Rudd, J.R., Woods, C. Correia, V., Seifert L. & Davids, K. (2021) An ecological dynamics conceptualisation of physical 'education': Where we have been and where we could go next. Physical Education and Sport Pedagogy, DOI: 10.1080/17408989.2021.1886271.*