Dynamic Systems Theory

Motor performance results from a dynamic process that is the product of the influence of multiple subsystems operating within a person (e.g. motivation, balance, strength).

When examining movement output the investigator should consider the influence of **individual** (person), **environmental** & **task** constraints that shape performance.
Quantitative Research Questions

- What is the influence of the SKIP motor skill program on the motor skill competence of disadvantaged preschoolers?

- Are there gender differences in motor skill competence prior to and following the SKIP motor skill program?

- Tie back to theory:
  - Task – FMS Competence
  - SKIP program provides an environmental constraint
  - Consider the learner characteristics in developing the SKIP program (e.g. delay, cognitive development, etc.)
Quantitative Research Questions

- What is the influence of the SKIP motor skill program on the motor skill competence of disadvantaged preschoolers?

- **Hypotheses**
  - No group differences at pretest
  - SKIP group significantly better than Control group across the intervention (from pretest to posttest)
  - Group differences at posttest – SKIP group better than Control group
  - Control group will not change from pretest to posttest
Qualitative researchers aim to gather an **in-depth understanding of the lived experience**.

- Investigates the *why* and *how* of decision making, not just *what*, *where*, *when*.
- Often smaller, but focused, samples are selected rather than large samples.
- Qualitative methods rarely claim to **generalize findings** to other populations. It produces information on the particular cases studied. More general conclusions are only propositions (informed assertions).
Qualitative Research - Inductive

- Cases (participants) selected purposefully, according to whether or not they typify certain characteristics/contextual locations.
- **Researcher lens** - researchers reflect on their role in the research process & make this clear in the analysis.
- **Interpretive** - Make meaning of the data collected
- **Holistic & contextual analysis of data** rather than being reductionistic and isolationist. Nevertheless, systematic & transparent approaches to analysis are almost always regarded as essential for rigor.
- **Inductive analysis** – data drives the Research Questions, the hypotheses (assertions), & conclusions made.
Theory for My Hot Topic

- Social Constructivism
- Constructivism is a theory of knowledge (epistemology) that argues humans generate knowledge and meaning from an interaction between their experiences and their ideas.
  - Each learner is unique, complex, & multidimensional with unique needs and backgrounds. This view of the learner promoted & supported in learning environment.
  - Encourages the learner to arrive at his or her version of the truth, influenced by his or her background, culture or embedded worldview.
Qualitative Research Questions

- How do children make individual meaning as they participate in the SKIP motor skill program and how do individual characteristics influence their understandings?
- What is children’s understanding of their changing motor skill competence across the SKIP motor skill program?
- How does the SKIP program influence children's motivation to be physically active?
- **Tie back to theory:**
  - Children are unique and their understandings will be different.
  - Focused on how children “see” their own motor competence not actual motor competence.
What Have We Learned?

• A hot topic can be looked at from many different perspectives
• There is often a relationship between research paradigm and the theory selected
• There should be STRONG relationship between THEORY and RESEARCH QUESTIONS – these two aspects should align
• The design of the study will come from the way the RQs are framed and the theoretical perspective