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SSEH2240

Lecture 2 – Classification of Motor Skills

Skills and Actions

- **Skills:** a task that has a specific goal to achieve (action goal)
- Motor skills require body, head and/or limb movement to achieve their goal
- **Action:** goal-orientated activities that consist of body and/or limb movements
- Motor skills share these characteristics and need to be learned

Types of Skills

- Motor skill
- Perceptual skill
- Cognitive skill

Most sport skills incorporate the use of all 3 of these

Movements

Movements are behavioural characteristics of a specific limb or a combination of limbs. There are 3 reasons for distinguished movements from skills and actions.

- People learn motor skills and actions
- People adapt movement characteristics to achieve a common goal
- People evaluate actions and movements with different types of measures

One-Dimension Classification Systems

- Identifies skill characteristics that are similar to those of other skills
- Divided into two categories, each representing extreme ends of a continuum



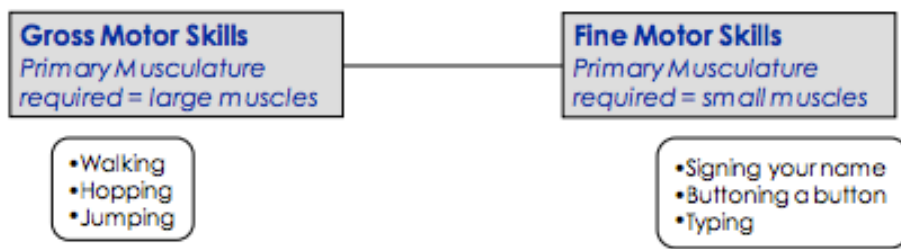
Motor skill classification that use one-dimension approaches

- Size of primary musculature required
- Specificity of where actions begin or end
- Stability of the environment context
- Motor-cognitive dimension

Size of Primary Musculature

- **Gross motor skills:** require use of the large muscles to achieve the goals of the skill (e.g. walking, jumping)
- **Fine motor skills:** requires control of small muscles to achieve the goals of the skill (e.g. throwing a dart)

- Some motor skills can involve both types to achieve the action goals



Specificity of Where the Action Begins or Ends

- **Discrete motor skills:** defined beginning and end points, usually a simple movement (e.g. turning on a light switch)
- **Continuous motor skill:** arbitrary (not obvious) beginning and end point, these skills involve repetitive movements (e.g. steering a car)

Stability of the Environmental Context

- **Closed motor skill:** motor skill performed in a stable or predictable environment (e.g. picking up a cup when seated)
- **Open motor skills:** motor skills involving a non-stable, unpredictable environment where an object or environmental context is in motion and determines where to begin the action (e.g. running a race with other runners)

Motor vs. Cognitive Elements

- **Motor skill:** the primary determinant of movement success is the quality of the movement itself, with less emphasis on the perceptual and decision making aspect of the task (**doing it correctly**)
- **Cognitive skill:** the nature of the movement is less important to success than the decision or strategy about which movement to make (**knowing what to do**)

Gentile's Two-Dimensions Taxonomy

Taxonomy is a classification system organised according to relationships among the component characteristics of what is being classified.

- **Environmental context**
 - Regulatory conditions which are characteristics of environment that control the movement characteristic of an action
 - Intertribal variability refers to regulatory conditions during performance are the same or different from one attempt to perform the skill to another
- **Function of the action**
 - Body orientation refers to the changing or maintaining of body location (body stability, body transport)
 - Object manipulation results in change of the position of an object

The 16 Skill Categories

- The interaction of the four environmental context characteristics and the four action functions characteristics creates 16 skill categories
- The table below represents this

	Action Function			
	Body Stability		Body Transport	
Environmental Context ↓	No object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions and no intertrial variability	Body stability No object Stationary reg. Conditions No intertrial var.	Body stability Object Stationary reg. Conditions No intertrial var.	Body transport No object Stationary reg. Conditions No intertrial var.	Body transport Object Stationary reg. Conditions No intertrial var.
Stationary Regulatory conditions and intertrial variability	Body stability No object Stationary reg. Conditions Intertrial var.	Body stability Object Stationary reg. Conditions Intertrial var.	Body transport No object Stationary reg. Conditions Intertrial var.	Body transport Object Stationary reg. Conditions Intertrial var.
In-motion regulatory conditions and no intertrial variability	Body stability No object Reg. Conditions in motion No intertrial var.	Body stability Object Reg. Conditions in motion No intertrial var.	Body transport No object Reg. Conditions in motion No intertrial var.	Body transport Object Reg. Conditions in motion No intertrial var.
In motion regulatory conditions and intertrial variability	Body stability No object Reg. Conditions in motion Intertrial var.	Body stability Object Reg. Conditions in motion Intertrial var.	Body transport No object Reg. Conditions in motion Intertrial var.	Body transport Object Reg. Conditions in motion Intertrial var.

Completely closed skill

Completely open skill

Stationary
No intertrial
variability

Stationary
Intertrial
variability

In motion
No intertrial
variability

In motion
Intertrial
variability