

- **Motor behaviour:** the study of movement and movement processes.
- **Motor control:** the study of how processes affect the control of movement.
- **Motor learning:** the study of the learning of skilled movements.
- **Motor development:** the study of how the learning and control of motor skills change across the lifespan.

Classification of skills, games & sports:

- **Skill:** voluntary goal-directed activity learned through practice or experience. The term 'skill' can also be used to describe the quality of performance. A skilled performer will have maximum certainty of goal achievement, and can execute the skill with minimum energy expenditure & in minimal time.
- **Motor skill:** voluntary goal-directed activity that we learn through practice or experience that requires movement of body or limbs.
- **Fundamental motor skills:** are foundation skills learned when young that provide the basis for the development of *specialized* motor skills.
 - **Stability:** control of the body in terms of balance (e.g. bending, twisting, swaying).
 - **Locomotor:** move an individual through space (e.g. crawling, walking, running).
 - **Manipulative:** involve control of an object (e.g. throwing, catching, kicking, striking).
- **Specialized motor skills:** advanced versions of fundamental motor skills (or combinations of fundamental motor skills) that we apply to a specific sport

Skills vs. Ability:

Skills	Abilities
<ul style="list-style-type: none">• Developed with practice• Modified with practice• Dependant upon abilities• E.g. catching, throwing, hitting, kicking	<ul style="list-style-type: none">• Inherited traits• Stable & enduring• Influence performance of sports• E.g. reaction time, hand-eye coordination, strength, flexibility

Motor Skill Classification – One Dimensional Classification System:

We can classify motor skills according to:

1. Precision of the movement: *gross movement* (e.g. weightlifting, high jumping) which involves large muscles and force/power compared to *fine movements* (e.g. drawing, typing) which involve small muscles & precision.

2. Organization of the skill: *discrete skills* have a clear beginning & end, involve one distinct movement, and are typically short in duration (e.g. catching, throwing, bowling, golf putting). *Continuous skills* have an arbitrary beginning and end, are repetitive movements, and are typically longer in duration (e.g. running, swimming). A *serial skill* involves several discrete actions linked together in a specific order. Serial skills are in the middle of the continuum, between discrete skills & continuous skills (e.g. triple jump, gymnastics routine).

3. Stability of the environment: the nature of the environment in which the performer is executing the skill. The environment can be *closed* – involving a safe, predictable environment where the performer is self-paced and typically performing a stereotyped movement (e.g. dart throwing, basketball free-throwing), or *open* – involving a variable & unpredictable environment, where the performer is externally paced and their movements are adapted to the environment (e.g. tackling in football, passing in netball, batting in cricket).

Advantages & Limitations to the One-Dimensional Approach:

- Simple & easy to follow
- It can be difficult to place a skill into one specific category (e.g. discrete or continuous).
- It doesn't provide a sufficient picture of the performance demands of a skill.

Motor Skill Classification – Two Dimensional Classification System (Gentile's System):

1. Environmental context:

- **Regulatory features:** are environmental features that influence how the participant performs the skill. The environment can be *stationary* (stable & doesn't change substantially) or *in motion* (changes during performance).
- **Intertrial variability:** whether requirements change from one performance to the next.

2. Action Requirements:

- **Body orientation** (whether the body is moving): *body stability* (where the body is not changing position) vs. *body transport* (body is moving).
- **Object manipulation** (whether the performer is controlling an object as part of the skill): object manipulation vs. no object manipulation.

Play, games & sports:

- **Play:** an activity voluntarily pursued for intrinsic rewards.
- **Games:** goal-directed activity that has rules. Has limited permissible means of achieving the goal. Prohibits more efficient means in favour of less efficient means. Players accept rules to make the game possible.

- **Sports:** games that require physical skill, have wide following & institutional stability.

Classification of Sports:

Play	Games	Sports
Prep - Year 3	Year 2 - Year 6	Year 5 - Year 10
Emphasis <ul style="list-style-type: none"> Fun and enjoyment Creative and spontaneous activities no/few formal rules Little or no equipment Basic locomotor skills No pressure, no winners 	Emphasis <ul style="list-style-type: none"> Agreed upon organisation of time and space Bounded by formal rules: defining Objective of activity restricting player behaviour Needing only minimum skill Developing manipulative and locomotor skills 	Emphasis <ul style="list-style-type: none"> Vigorous, physical, competitive activities Enforceable, standardised rules and playing conditions Needing more complex skills and greater practice and training Tactics and strategies required for specific sports Transfer of learning between games of similar construction
Experiences <ul style="list-style-type: none"> Rhyming/singing games Tag/chasing games Basic ball games Creating games 	Experiences <ul style="list-style-type: none"> Minor games Specific sport skills Lead up games Modified games and sports Creating games Basic strategies and tactics Health related fitness for games 	Experiences <ul style="list-style-type: none"> Specialised sport skills Major sports Modifying major sports to make them inclusive Apply skills and strategies Developing codes of behaviour officiating and administering Physical training for specific sports

Sports can be classified according to:

- **Type:** whether the sport is an individual or team sport
- **The degree of interaction involved:** whether the sport is *coactive* (performed in isolation e.g. golf) or *interactive* (performed working together with other participants e.g. football, rugby).

Classification of Games:

- **According to developmental level:**

Developmental Level	Types of games	Description	Game Characteristics
Level 4 Games	Official Sport Games	Official version of game or sport played according to official rules	<ul style="list-style-type: none"> Official version of game Played by official rules Official equipment
Level 3 Games	Lead-Up Games	Allow learners to practice skills in modified environment, to develop skills and strategies and provide a game appropriate for current skill levels	<ul style="list-style-type: none"> Small sided-games Modified games Most motor skills and movement concepts involved
Level 2 Games	Skill Challenge Games	Provide opportunities for learners to test their skills and involve few and simple rules	<ul style="list-style-type: none"> Use of 2 or more motor skills Limited and simple rules Can involve skill challenge games
Level 1 Games	Low Level Games	<p><i>Familiarisation:</i> allow learners to become aware of the basic skills</p> <p><i>Discovery:</i> allow learners to gain awareness of game and how to play it</p>	<ul style="list-style-type: none"> Little or no equipment Limited rules Easy to play Focus on single skills 1 or 2 game strategies Playable individually or in small groups

➤ **According to tactical similarities:**

- 1. Invasion games:** aim to invade the opponent's territory to score points – by shooting into a target/goal (focused target) or by moving a ball over a line (open end target). In these games, gaining & maintaining possession of the ball is crucial.
- 2. Net/wall games:** aim to send an object into an opponent's area so that the opponent can't return it (to score points). The players are separated by a net, or use a wall with alternating hits by the players. In these games, placing the ball where the opponent cannot return it is crucial.
- 3. Striking/fielding games:** aim to strike a ball so as to maximize the time to run (batting team), or to prevent runs and get batters out (fielding team). In these games, hitting the ball away from fielders to maximize the time to score runs is crucial.
- 4. Target games:** aim to get an object as close as possible to or in the target in as few attempts as possible (e.g. lawn bowls). Accuracy in relation to the target is the determinant of success.

Rules:

Rules provide structure for the game. They define the game problem and constrain the means available to solve the problem.

- **Primary rules:** identify how the game is played and how the game is won. Are what make hockey 'hockey' and soccer 'soccer'. For example, no handling of the ball in soccer. No throwing of the ball in AFL football.
- **Secondary rules:** arise out of the game and can be modified without altering the essence/nature of the game. Are open to interpretation. For example, the number of points played in the tie-break in tennis, the size of the ball in soccer.

Learning & Performance of Motor Skills:

- **Performance:** observable behaviour of executing a skill at a specific time and in a specific situation.
- **Learning:** an internal process indicated by a change in capability to perform a skill due to practice or experience. Learning is inferred by measuring performance.
- ⇒ Performance is observable behaviour that can be measured directly. Performance is temporary (specific time & situation).
- ⇒ Learning is an internal state. Learning is inferred from performance. Learning is a permanent change in capacity.
- ⇒ NB: it is difficult to infer learning from performance, as performance can vary (is not stable over time & situation).
- ⇒ **Performance variables** (variables influencing performance) can include characteristics of the learner (e.g. confidence, motivation, fatigue), the learning environment (e.g. quality of instructions, level of feedback) and the performance environment (e.g. weather, playing surface).

Characteristics of Motor Skill Learning:

- **Improvement** – performance gets better over time.
- **Consistency** – performance becomes more consistent in terms of process of movement and product of movement.
- **Stability** – performance of a skill is less influenced by internal or external disruptions.

- **Persistence** – performance is retained over time.