

How are skill, ability + technique related with regard to both novice and skilled sports performer?

How can different skills be grouped together?

5.1.1 Define the term skill

Sub-topics

1. The characteristics and classification of skill

2. Information processing

3. Principles of skill learning

- Skill is the learned ability to bring about predetermined results with the maximum certainty, often with the minimum outlay of time, energy or both. (Knapp, 1967)
- Skill involves learning via practice. (Wesson et.al 1998)

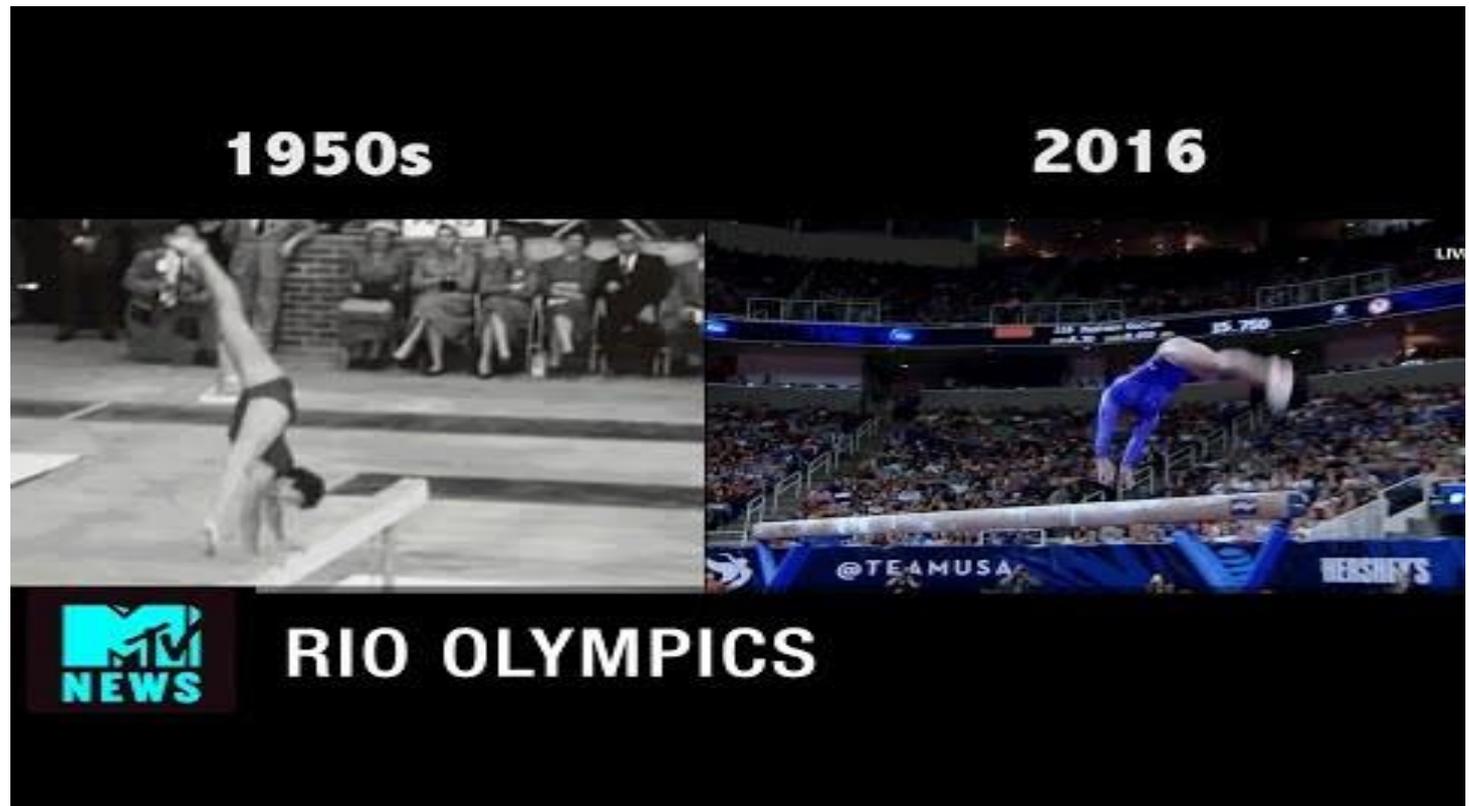
Do they both have skill?

Topic 5
Skill in sport

5.1.1 Define the term skill

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5.1.1 Define the term skill

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- The main characteristics of skills, therefore, are the following:
 - **They are goal oriented**, using the skill will achieve an end result. For example, typing a letter, putting a golf ball in the hole or making a save in soccer.
 - **They meet the performance goal with maximum certainty.**
 - For example, maintaining balance while riding a bike or making 90% of shots in a basketball game.

5.1.1 Define the term skill

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- The main characteristics of skills, therefore, are the following:
 - **They meet the performance goal with minimum outlay of energy.**
 - For example, steering a car, staying streamlined in the water during a freestyle race or skiing parallel down the slope.
 - **They are learned through practice.** They require some experience, repetition or feedback from a teacher or coach.

5.1.2 Describe the different approaches to classifying skills

- There are many different types of skills and they vary according to the different motor, cognitive, perceptual and perceptual-motor demands placed on the performer.
- **Motor skill** - Weightlifting, for example, is mostly a motor skill because it emphasizes movement and does not require much thinking.
- **Cognitive skill** - Playing chess requires mostly cognitive skill because it requires lots of thinking.

5.1.2 Describe the different approaches to classifying skills

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- **Perceptual skill** - Reading the green in golf is a perceptual skill. The golfer receives information about the type of surface, the run of the green, the distance of the ball from the hole, and other environmental conditions through their perceptual senses.
- **Perceptual-motor skills** - These skills involve the interpretation of environmental stimuli and the motor response to this sensory information.

5.1.3 Outline the different approaches to classifying motor skills

- **Skills can be classified according to their characteristics** and this helps us to understand the demands of the skill.
 - This can help coaches or teachers to evaluate performance, plan sessions and provide the performer with feedback.
- **Skills cannot always be neatly placed in one class or another.**
 - To overcome this they are placed on a continuum; a line on which each skill can be placed depending on how much they match the characteristics within each classification.

5.1.3 Outline the different approaches to classifying motor skills

- Magill (1998) suggests **three skill classification** criteria based on:
 - The distinctiveness of the movement characteristics (discrete motor skills; serial motor skills; continuous motor skills)
 - The stability of the environment (closed motor skills; open motor skills)
 - The size of the musculature involved (fine motor skills; gross motor skills).

5.1.3 Outline the different approaches to classifying motor skills

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- **Discrete skills have a clear start and finish. They are usually brief and well defined.**
 - Examples of discrete skills are a forward roll in gymnastics, a golf swing or a penalty stroke in field hockey.
 - Each of these skills are clearly defined and it is obvious when the movement starts and when it stops.

5.1.3 Outline the different approaches to classifying motor skills

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1. The characteristics and classification of skill

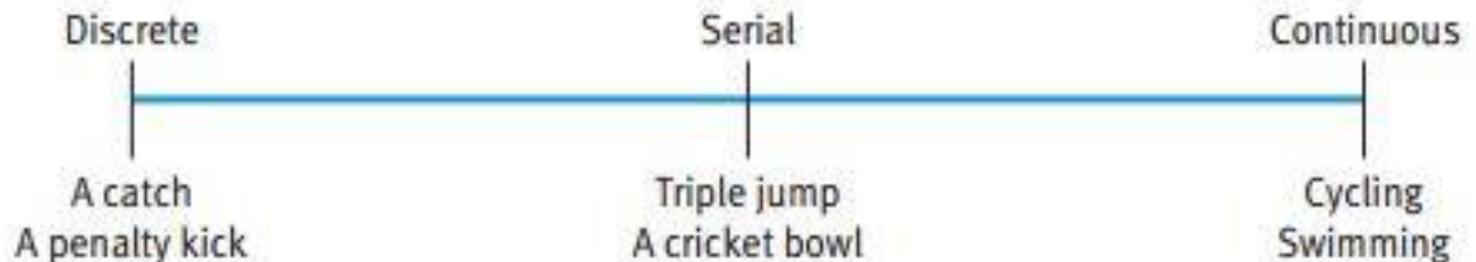
2. Information processing

3. Principles of skill learning

- **Serial skills involve the linking together of skills to form a longer, more complex movement.**
 - This takes place in gymnastics where the gymnast links together a series of flips and somersaults.
 - This also takes place in the triple jump, where athletes bring together the hop, the skip and the jump to create one long movement in order to achieve maximum distance.

5.1.3 Outline the different approaches to classifying motor skills

- **Continuous skills are where the end of one cycle of movement is the beginning of the next.**
 - They are repetitive, rhythmical and take place over a long period of time.
 - Continuous skills include swimming, running



5.1.4 Compare skill profiles for contrasting sports.

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- **The stability of the environment**

- This classification is related to the way in which the environmental conditions affect the skill.

- Environmental factors can be the weather, obstacles, boundaries, teammates and opponents.

- **Open skills** are those skills that are significantly affected by the environmental conditions, to the extent that the conditions dictate the pace of the movement.

- The environment is largely variable and unpredictable and, as such, the performer has to adapt their movements accordingly.

5.1.4 Compare skill profiles for contrasting sports.

- **Closed skills** are skills that are performed in a more stable and predictable environment and, as such, can be internally paced by the performer.
 - Closed skills follow set movement patterns and are performed in the same way each time.



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- **Size of the musculature involved**
- This classification of skills is related to the precision of the movement.
 - **Gross motor skills** are movements that **involve large muscle groups such as arms and legs**. They include skills such as walking, jumping, running and kicking.
 - **Fine motor skills** involve much smaller muscle groups and fine movements. They are more **intricate, precise and often require high levels of hand-eye coordination**. They include skills such as playing the piano, playing darts and catching a ball.

5.1.4 Compare skill profiles for contrasting sports.

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As with the other classifications described above, these skills are placed on a continuum. This is because while some skills may involve large muscle groups and therefore be mainly gross motor skills, they may also involve fine motor skills.



5.1.4 Compare skill profiles for contrasting sports.

TO DO

Skill classification task

Classify the following skills by placing up to three ticks in the appropriate column.

	DRIBBLING IN SOCCER TO BEAT AN OPPONENT	THE SHOT-PUT	A DANCE MOTIF
Open			
Closed			
Fine			
Gross			
Discrete			
Serial			
Continuous			

↑ Table 5.1

5.1.4 Compare skill profiles for contrasting sports.

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The interaction continuum

- Different skills relating to different activities vary in the way and context in which they are performed.
- Sometimes they are performed alone and sometimes they are performed with or alongside others.
- We can characterize skills in this way by placing them on the interaction continuum.
- There are three main ways in which they can be categorized: **individual, coactive and interactive**

5.1.4 Compare skill profiles for contrasting sports.

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- **Individual skills** are those skills that are performed in isolation from others. Only one performer is involved at a particular time. For example, archery or the high jump.
- **Coactive skills** are those skills that are performed with someone else, but with no direct confrontation. Coactive skills are performed in swimming and in track athletics such as the 100 meter or 200 meter sprints.
- **Interactive skills** are where other performers are directly involved and can involve confrontation. This is because there is an active opposition and this directly influences the skill. Interactive skills are evident in games such as rugby, water polo and soccer.

Describe the different types of skill

Cognitive	
Perceptual	
Motor	
Perceptual-motor	

Outline the different approaches to classifying skill motor skills

For each of the classifications of motor skills define what they show and use sporting examples, placed on the continuum line to demonstrate you understand how they are defined.

Check your sporting examples with you partner.

Gross		Fine
Explanation...		
Open		Closed
Explanation...		
Internally-paced		Externally-paced
Explanation...		

Cognitive, motor, perceptual and perceptual-motor. Which is which?

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The Stability of the environment

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Open

Vs

Closed

The Size of the musculature

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Vs

Fin

Gross



The distinctiveness of movement characteristics

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serial

Vs

Discrete



continuous



Skill

Ability

Technique

Do you think PMA abilities or PPA abilities are most needed for your sport? Discuss your opinion with your partner.

State the relationship between skill, ability and technique

5.1.5 Outline Ability

- The term “ability” is often confused with the term skill, however, although they are related, they are not the same thing.
 - As mentioned in the previous section, skills are largely defined by their purpose, goal or objective, and by the fact that they require practice.
- **Abilities, however, are the traits that we are born with.**
 - They are the perceptual and motor attributes, inherited from our parents that enable us to perform skills. Abilities give us the capacity to perform skills.

5.1.5 Outline Ability

- **Perceptual-motor abilities** are abilities that enable the individual to process information about how and when to move.
 - For example, in order to execute a skill such as a forehand groundstroke in tennis.
- **Motor abilities** are those abilities relating to the actual movement.
 - For example, in order to perform a skill such as the 100 meter sprint individuals require motor abilities such as explosive strength and speed of limb movement.

5.1.5 Outline Ability

- Abilities are the qualities that enable individuals to perform the skill and, compared to skills, they are much more stable and enduring.
- Other examples of the abilities that enable us to perform sports skills are muscular endurance, strength, flexibility, coordination and balance.
- Individuals differ in the strength of their abilities.
 - Those individuals who have strong abilities that benefit a specific skill or activity will appear to demonstrate competence in that activity with relative ease. However, it is only with practice that someone becomes truly skillful

5.1.5 Outline Ability

- It is important to remember that ability is not the only factor that contributes to successful performance.
- Failure to invest in practice time may also result in a below-par (low skill level) performance.

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Factors affecting abilities



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1. An individual's abilities are shaped by biological and physiological factors (Fleishman, 1964).
2. The composition of an individual's muscular tissue is certainly going to affect their physical proficiency motor abilities such as strength, endurance, and flexibility.
3. Physiological deficits in the development of rods and cones (in eyes) would also limit an individual's perceptual-motor abilities, potentially affecting reaction time.
4. Abilities are also affected by environmental factors. For example, children who are afforded formal education will continue to develop their verbal and reasoning abilities throughout their academic years, just as children who participate in physical fitness- or sport-related programs will develop their motor abilities.
5. The rate at which abilities develop varies across childhood and adolescence, both within individuals and across individuals. This is largely due to growth and maturation changes. The rate of development levels out between the ages of 18 and 22 years, remaining relatively stable throughout adulthood (Fleishman, 1964)

5.1.6 Distinguish between Fleishman's physical proficiency abilities & perceptual motor abilities

- One of the major researchers into abilities was Edwin Fleishman. Using a statistical method called factor analysis Fleishman identified a number of abilities

Physical proficiency abilities consist of gross movements/use of large muscle groups (ex physical factors).

Perceptual motor abilities are a combination of how we make sense of our environment (perception) and how we act (motor control) (ex psychomotor factor).

5.1.6 Distinguish between Fleishman's physical proficiency abilities & perceptual motor abilities

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PERCEPTUAL-MOTOR ABILITIES	PHYSICAL PROFICIENCY ABILITIES
Control precision [control over fast, accurate movements that use large areas of the body]	Extent [or static] flexibility
Multi-limb coordination	Dynamic flexibility
Response orientation [selection of the appropriate response]	Static strength
Reaction time	Dynamic strength
Speed of arm movement	Explosive strength
Rate control [coincidence-anticipation]	Trunk strength
Manual dexterity	Gross body coordination
Arm–hand steadiness	Gross body equilibrium
Wrist–finger speed [coordination of fast wrist and finger movements]	Stamina [cardiovascular fitness]
Aiming	
Postural discrimination [coordination when vision is occluded]	
Response integration [integration of sensory information to produce a movement]	

5.1.8 State the relationship between ability, skill and technique

We have used the words “motor control” to describe how we act or move.

- Another word that can be used to describe how we move is “technique”.
- When physical educators and psychologists talk about technique they are commenting on the way the individual controls his or her limbs.
- It is a part of what we mean by skill but not the only part.

In order to perform skillfully the **person must have the necessary technique** or techniques and **choose the correct one to use in any particular situation.**

In other words: **Skill = Ability + Selection of the correct technique**

5.1.9 Discuss the differences between a skilled and a novice performer

- Watching highly skilled performers is uplifting.
- Everything they do looks effortless.
- Their movements are fluent, they know what they want to achieve and how to achieve their goals.
- They are very efficient, energy is not wasted and there is great consistency in their performances

5.1.9 Discuss the differences between a skilled and a novice performer

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5.1.9 Discuss the differences between a skilled and a novice performer

- Novices are inconsistent.
- They can and do sometimes produce a good performance but generally they do not.
- They are far from fluid and appear to lack coordination.
- Their movements are inefficient and often we cannot tell what they are trying to do.
- Sometimes they do not know what they are trying to do.

5.1.9 Discuss the differences between a skilled and a novice performer

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Genetics are the most important factor in becoming a skilled performer?

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1. The characteristics and classification of skill

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How are skill, ability + technique related with regard to both novice and skilled sports performer?

How can different skills be grouped together?

Any questions before you start your quiz?

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The image shows the Kahoot! logo in a large, white, 3D-style font with a slight shadow, centered on a solid blue rectangular background. The text reads "Kahoot!" with an exclamation mark.

Using the definition of skill – compare a novice and skilled performer

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For each of the attributes below describe how a skilled performer and a novice would differ in terms of their performances.



Skilled performer	Novice
Consistency	
Accuracy	
Control	
Learned	
efficiency	
Goal -orientated	
fluency	

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Any questions before you start your quiz?

How can different skills be grouped together?

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The screenshot shows a web browser displaying an Edmodo quiz preview page. The URL in the address bar is https://www.edmodo.com/home#/quiz/start/quiz_run_id/4276055. The page features a navigation bar with a search box and various icons. A yellow banner at the top of the main content area reads "You are previewing this quiz. [End Preview]". Below this, the quiz title "5.1 The characteristics and classification of skill" is displayed with a question mark icon. Underneath the title, it states "Total questions: 7 | Time Limit: 1:00:00". A blue "Start Quiz" button is positioned at the bottom of the quiz preview box. At the very bottom of the page, there is a footer with the text "Edmodo ©2014" followed by a series of links: "About", "Careers", "Newsroom", "Contact Us", "Classrooms", "Districts", "Community", "Blog", "support", "Privacy", "Terms", and "Languages".