The Learning Environment

- the learning environment
  - nature of the skill (open, closed, gross, fine, discrete, serial, continuous, self-paced, externally paced)
  - the performance elements (decision-making, strategic and tactical development)
  - practice method (massed, distributed, whole, part)
  - feedback (internal, external, concurrent, delayed, knowledge of results, knowledge of performance)

- design a suitable plan for teaching beginners to acquire a skill through to mastery. The plan should reflect:
  - appropriate practice methods for the learners
  - the integration of relevant performance elements
  - an awareness of how instruction may vary according to characteristics of the learner
  - how feedback will be used as learners progress through the stages of skill acquisition
The learning environment

• All aspects external to the athlete and teams themselves, can greatly influence skill acquisition and tactical development. These may relate to and be influenced by:
  • The nature of the skill being developed
  • Performance elements and requirements
  • Practice methods used in training
  • The quality of feedback received about performance and development.
Nature of the skill

• Skills can be classified in a number of ways.
• Open & closed
• Gross & fine
• Discrete, serial & continuous,
• Self-paced & externally paced
• Most skills fit a number of classifications and will affect the type of training that is needed.
• 5mins to memorise the classifications of skills, and tell person next to you.
Open or closed skills

• Refers to the predictability and stability of the environment and external factors.

• **Open skills** occur in an environment that is unpredictable and frequently changing. Can be related to the physical environment eg weather (taking a penalty kick & having to consider the direction of the wind), or to do with other team tactics or a playing surface that changes eg cricket pitch


• **Closed skills** occur in an environment that is stable and predictable. Eg ten pin bowling as the environment doesn’t chage (lane, gall, pin placements & weather conditions remain constant).
Figure 8.11: Surfing is an example of an open skill due to the unpredictability of the environment.

- 5 mins - Search for a video of an open & closed skill from the Rio 2016 Olympics
Few skills fit perfectly into open or closed categories. Most can be placed on a continuum that illustrates a progression from closed to open.

Figure 8.10: A continuum for illustrating open and closed skills
Open and closed skills

Draw a continuum similar to the one in figure 8.10. Place the following skills at the positions you feel are appropriate on the continuum.
(a) putting in golf
(b) tackling in football
(c) surfing
(d) weight-lifting
(e) indoor trampolining
Justify your decisions.

Figure 8.10: A continuum for illustrating open and closed skills
Some answers....

<table>
<thead>
<tr>
<th>Inquiry</th>
<th>Open and closed skills</th>
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<tbody>
<tr>
<td>(a)</td>
<td>Putting in golf</td>
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<td>(b)</td>
<td>Tackling in football</td>
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<tr>
<td>(c)</td>
<td>Surfing</td>
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<td>(d)</td>
<td>Weight-lifting</td>
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<td>(e)</td>
<td>Indoor trampolining</td>
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<th>Closed</th>
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Gross or fine motor skills

• Refers to the level of motor control and precision of the skill.

• **Gross motor skills** require the use of large muscle groups for execution.

• **Fine motor skills** require the use of only small muscle groups to perform the movement.

• Running requires mostly large and gross body movements whereas spin bowling in cricket requires small fine finger movements.

• 5 mins – search for a video of each from the Rio 2016 Olympics
• As with open and closed skills, fine motor and gross motor skills rarely fit a single classification, and often can be placed along a continuum.
Gross motor and fine motor skills

Draw a continuum similar to the one in figure 8.12. Where would you place the following skills:
(a) archery  
(b) swimming  
(c) juggling  
(d) throwing  
(e) goal shooting in netball?  
Justify your decisions.

**Figure 8.12:** A continuum for illustrating gross motor and fine motor skills
Some answers...

**Inquiry** | **Gross motor and fine motor skills**
---|---
(a) | Archery
(b) | Swimming
(c) | Juggling
(d) | Throwing
(e) | Goal shooting in netball

<table>
<thead>
<tr>
<th>Fine motor</th>
<th>Gross motor</th>
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Discrete, serial and continuous skills

• Refer to the process of performing a skill.
• Discrete skills have a defined start and end (a shot in Netball).
• Serial skills are where several skills are linked together in one movement (running, dribbling and shooting a layup in basketball).
• Continuous skills do not have a clearly defined start and end and are arbitrary (Recreational swimming or surfing).
• [https://www.youtube.com/watch?v=f-j3RZmyRpM](https://www.youtube.com/watch?v=f-j3RZmyRpM) Simone Biles Floor Routine – example of serial skill (run, leap, jump, land)
• **Discrete skills** have a distinctive beginning and end that can be identified.

• **Serial skills** involve a sequence of smaller movements that are assembled to make a total skill.

• **Continuous skills** have no distinct beginning or end.

• 5 mins – search for a video of each from the Rio 2016 Olympics
Figure 8.14: A serial skill

Figure 8.16: (a) Discrete, (b) serial and (c) continuous skills in action
Discrete, serial and continuous skills

On a continuum from ‘discrete’ to ‘continuous’, identify where you would place the following skills:
(a) canoeing
(b) trail-bike riding
(c) sailing
(d) performing a vault in gymnastics
(e) throwing a javelin
(f) performing a gymnastics routine.
Justify your decisions.
Some answers...

(a) Canoeing
(b) Trail-bike riding
(c) Sailing
(d) Performing a vault in gymnastics
(e) Throwing a javelin
(f) Performing a gymnastics routine
Self-paced and externally paced skills

- Where an athlete chooses when to execute a skill it is self-paced (vaulting in gymnastics), whereas if the timing of the skills is dependent upon external sources it is externally-paced (hitting the ball in cricket).
• **Self-paced skills** are movements for which the performer determines the timing and speed of execution (eg tennis serve).

• **Externally paced skills** are movements for which an external source controls the timing.

• 5 mins – search for a video of each from the Rio 2016 Olympics
Self-paced skill

Externally paced skill
Self-paced and externally paced skills

1. Identify:
   (a) five self-paced and
   (b) five externally paced skills.

2. Explain why your selections fit these classifications.
Some answers...

### Inquiry

**Self-paced and externally paced skills**

1. **(a)** Self-paced skills include kicking a football in practice, serving a tennis ball, putting in golf, diving, archery and taking a free-throw shot in basketball.

   **(b)** Externally paced skills include dancing, rhythmic gymnastics and aerobics where these skills are performed to music, surfing and fencing.

2. Self-paced skills are where the performer determines the time and pace of execution. With externally paced skills, factors external to the performer set the time for execution of the movement.