

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
- <http://www.volleyballaustralia.org/post/rio-olympics-update-beach-volleyball> (beach volleyball Rio 2016)
- **Closed skills** occur in an environment that is stable and predictable. Eg ten pin bowling as the environment doesn't change (lane, ball, 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....

Inquiry **Open and closed skills**

- (a) Putting in golf
- (b) Tackling in football
- (c) Surfing
- (d) Weight-lifting
- (e) Indoor trampolining

Closed

Open

d	e				a	b	c
---	---	--	--	--	---	---	---

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



Figure 8.12: A continuum for illustrating gross motor and fine motor skills

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

Fine motor

Gross motor

a	c	e	d				b
---	---	---	---	--	--	--	---

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>
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

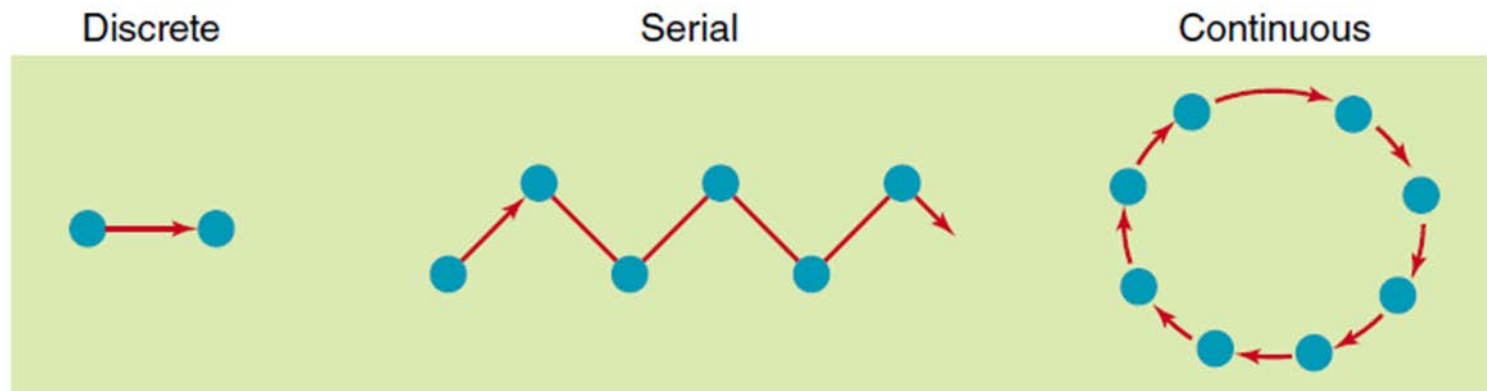


Figure 8.15: Discrete, serial and continuous skills

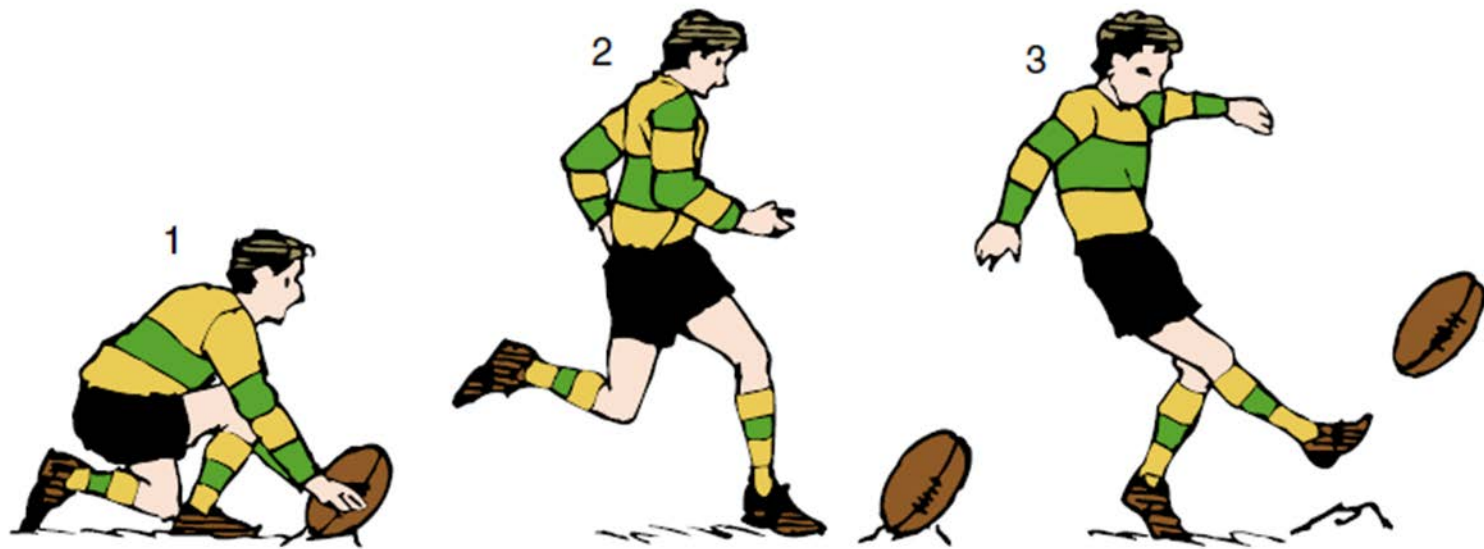


Figure 8.14: A serial skill

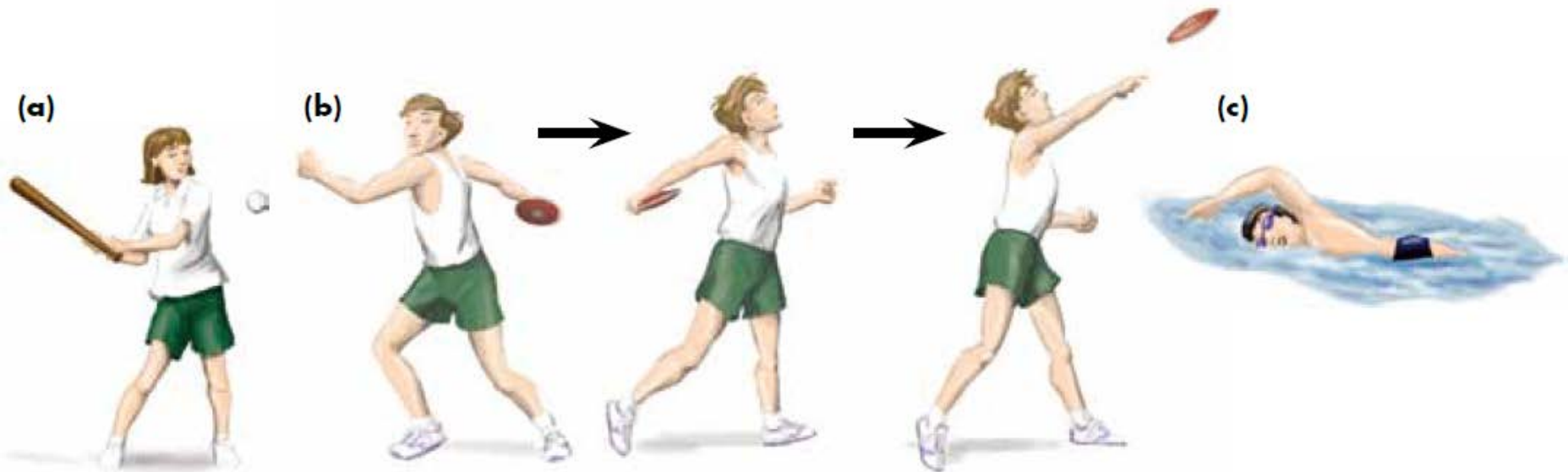


Figure 8.16: (a) Discrete, (b) serial and (c) continuous skills in action

Discrete, serial and continuous skills

On a continuum from 'discrete' to 'continuous', identify where you would place the following skills:

- | | |
|-----------------------|--------------------------------------|
| (a) canoeing | (d) performing a vault in gymnastics |
| (b) trail-bike riding | (e) throwing a javelin |
| (c) sailing | (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

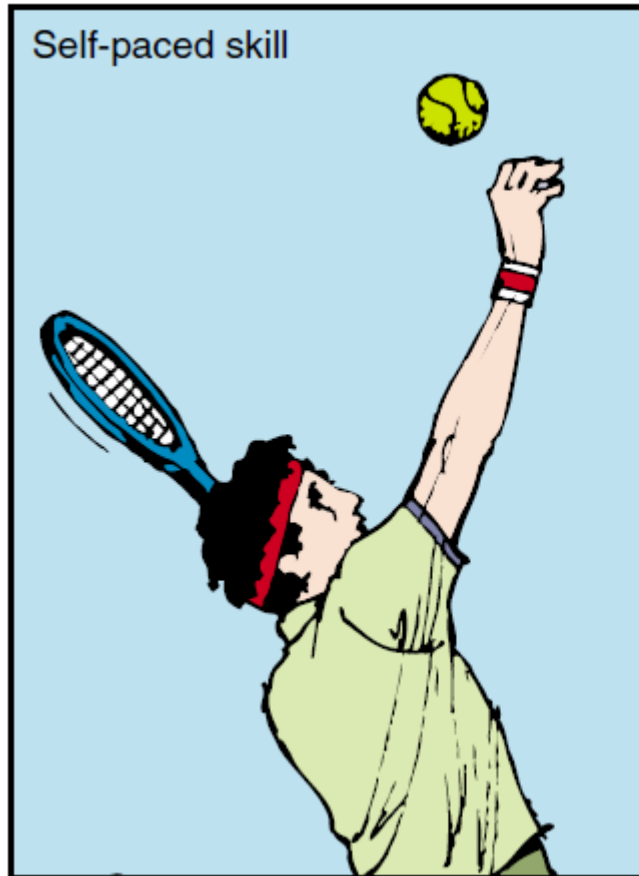
+	Discrete	Serial			Continuous		
		d, e		f		a	b, c

Self-paced and externally paced skills

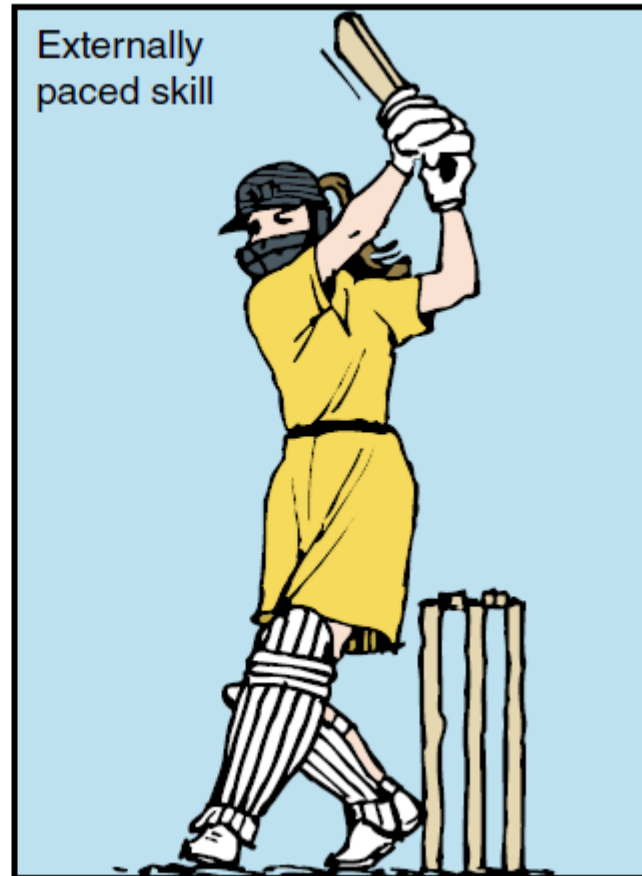
- Where an athlete chooses when to execute a skill it is self-paced (vaulting in gymnastics), whereas if the timing of the skills is dependent upon external sources it is externally-paced (hitting the ball in cricket).

- **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.