AS PE

Acquiring movement skills

Name ....

Acquiring Movement Skills - Revision Checklist

Key Term	Definition
Continuum	An imaginary scale between two extremes that shows a gradual increase/decrease in a number of characteristics
Positive Transfer	One skill helps the learning and performance of another
Stimulus	Information that stands out from the background and to which the performer pays attention
Proprioception	The sense that allows us to know what position our body is in, what our muscles are doing and to feel things involved in our performance, e.g. the ball, the hockey stick. It consists of touch, kinaesthesis and equilibrium
Perception	The process that involves the interpretation of information. This is the process by which we make sense of the stimuli we receive.
Motor programme	A series of movements stored in the long-term memory. They specify the movements the skill consist of and the order they occur. They can be retrieved by one decision.
Feedback	The information received by the performer during the course of the movement or as a result of it
Encoding	To put information into a coded form
Selective attention	The process of picking out and focusing on the relevant parts of the display. This filtering out is also important as irrelevant parts of the display
Overlearning	This is when the performer has already perfected the skill being learned but still carries on practising. This extra time can strengthen motor programmes and schema.
Chunking	Different pieces of information are put together and remembered as one piece of information
Hicks Law	States that choice reaction time increases linearly as the number of stimulus/choice alternatives increases
Mental rehearsal	This is picturing of the performance in the mind and does not involve physical movement. It consists of mental imagery, viewing videos of the performance, reading or listening to instructions
Motor programme	A generalised series or pattern of movements stored in long-term memory
Hierarchical	Order of importance, eg. The EMP is more important than the sub-routines
Sequential	Sub-routines are performed in sequence

Grooved & overlearned	Means that the motor programme has been well learned and is stored in the long-term memory
Open loop control	A system of subconscious control that does not use or reference feedback
Memory trace	The formation of the executive motor programme
Proprioception	Internal information received from muscles, nerves, joints and tendons. This information gives kinaesthetic sense
Kinaesthesis	Internal feedback, often referred to as the 'feeling tone'. The correct feel of the skill is fully in place at the autonomous stage of learning
Perceptual trace	The feedback loop
External feedback	Information taken from the environment concerning performance
Drive reduction	Loss of motivation
Transfer	Transfer of learning is the influence of one skill on the learning and performance of another skill
Motivation	The drive to learn and perform well. It is described as the direction and intensity of behaviour
Arousal	The degree of physiological and psychological readiness or activation. This varies on a continuum from deep sleep to intense excitement
Dominant response	The behaviour or response that is most likely to be given by the performer
Inhibition	Mental fatigue or boredom that will cause performance to deteriorate
Attention field	The area of concentration
Hypervigilence	A condition of nervousness and panic; often accompanied by extreme anxiety
Information overload	An excess of sensory data
Complete reinforcement	Refers to the process that rewards every successful response
Partial reinforcement	Is administered when a number of correct responses occur. This process takes longer but the result is more permanent than complete reinforcement
Perception	The cognitive process of interpreting (making sense of) incoming environmental cues
Mental rehearsal	Involves forming a mental image of the skill that is about to be performed

| Insight learning	Refers to problem solving that incorporates the use of perception, intelligence and previous experience
Transfer of learning	'transfer' means the influence that one skill has on the learning and performance of another. The process is extremely important to the acquisition of movement skills because practically all learning is based on some form of transfer.
Optimising transfer	The effects of transfer are maximised and have a full influence on the learning and performance of movement skills

Classification of motor skills and abilities

Continuum is used to analyse a movement skill and is an imaginary scale between two extremes that show a gradual increase/decrease in a number of characteristics.

We use continua to classify movement skills because of the following:
- It is difficult to be specific as skills have elements of all characteristics to a greater or lesser extent
- These characteristics can change depending on the situation in which they are performed
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There are six continua that you need to be able to classify....
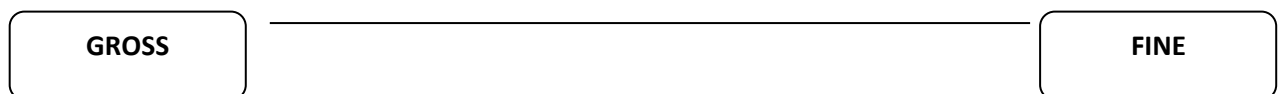
GROSS	FINE

Gross - Involves large muscle movements where there is little concern for precision
Examples

Fine - Involves intricate movements using small muscle groups and emphasises hand-eye co-ordination and involves accuracy skill
Examples

OPEN	CLOSED
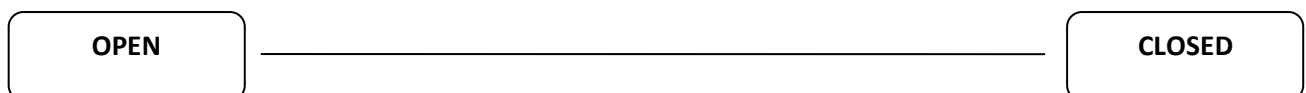
Open - movements that are affected by the environment / team mates / opponents / surface with lots of decisions to be made
Examples

Closed - Not affected by the environment, they are habitual and follows a technical model. They are usually self-paced
Examples

SIMPLE		COMPLEX

Simple - little information to process and few decisions to make. A small number of sub-routines involved where speed and timing are not critical. Use of feedback is not critical
Examples

Complex - has a high perceptual load leading to many decisions having to be made. The skill will have many sub-routines where speed and timing are critical, together with the significant use of feedback
Examples

LOW ORGANISATION		HIGH ORGANISATION

Low - made up of sub-routines that are easily separated and practised by themselves
Examples

High - movement skills where the sub-routines are very closely linked together and are very difficult to separate without disrupting the skill
Examples

SELF PACED (internally)		EXTERNALLY PACED

Self paced - the performer is in control and determines when the movement starts and the rate at which it proceeds
Examples

Externally paced - control of the movement is not determined by the performer but by the environment (often the opponent).
Examples

DISCRETE		SERIAL		CONTINUOUS

Discrete - have a clear beginning and end. To be repeated this single skill must be started again.
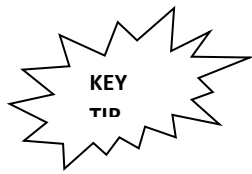
Examples

Serial - skills that have a number of discrete elements put together in a definite order to make a movement or sequence
Examples

Continuous - have no definite beginning or end. The end of one cycle is the start of the next.
Examples

KEY
TIP

You will need to be able explain and justify where a motor skill is placed on each continuum.

Answer the following question...
Jan 2009 paper
The classification of motor skills in sport is often used in determining the most effective practice methods.
Using a motor skill of your choice, mark its position on each of the following continua and write a justification for **each** placement.

Name of motor skill
....

Gross..
......**Fine**

Justification
....

....
....

Open...
.**Closed**

Justification
....

....
....

Discrete..**Serial**...**Cont inuous**

Justification

....

....

....

Externally paced..**Self paced**

Justification

....

....

....

Simple..**C omplex**

Justification

....

....

....

Low organisation ....**High organisation**

Justification

....

....

.......**[6]**

Complete the following table

Practice Type	Characteristic	Example
Part Practice Learner must see the whole skill demonstrated prior to learning	Working on perfecting isolated sub-routines; once the sub-routines are perfected, they are put back together	Swimming – practicing body position, leg action then breathing separately then putting them together
Advantages		
Disadvantages	• Takes longer than other methods • Transferring the parts back into the whole can be difficult • Learners can lose kinaesthetic sense and flow of the skill	

Practice Type	Characteristic	Example
Whole Practice Ideally all skills should be taught by this method	The skill is learned in its complete form without being broken down into sub-routines	
Advantages	• Good for skills high in organisation or continuous; low in complexity • Allows the learner to get the flow & timing (kinaesthesis) of the skill • Helps the learner understand the movement • Can be quicker than other methods / good for ballistic skills	
Disadvantages		

Practice Type	Characteristic	Example
Progressive Practice Sometimes known as chaining		Gymnastic floor routine triple jump lay-up shot in basketball
Advantages	• Good for complex skills as it reduces information load • Good for skills low in organisation; serial skills • Helps the flow of the skill and can also help the transfer of sub-routines into the whole skill	
Disadvantages		

Practice Type	Characteristic	Example
Whole-Part-Whole	Learner tries the whole skill first to get the feel of the performance Teacher then identifies the weak parts of the skill which are practiced in isolation Once the weak parts are perfected, the whole skill is tried again	Tennis serve: coach identifies that the ball is tossed up high enough and practises/perfects this before returning to the whole skill

Advantages	
Disadvantages	
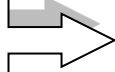
10 marke

Attempt this possible 10 marker.

Compare the following methods of manipulating skills: part, whole, progressive part and whole-part-whole. **Critically evaluate their effectiveness** in the learning of movement skills**.   [10 marks]**

Types of Guidance and their impact upon effective performance & participation

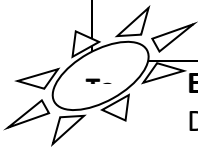| Visual Guidance	Verbal Guidance
This can be in the form of a demonstration to help the learner form a mental image of the skill	This is the most frequently used form of guidance

Vision is the dominant sense and we learn through imitation / needs to be accurate Visual guidance can also be: video, charts, diagrams, markings on floor etc **Example**: teacher demonstrates a chest pass drawing attention to hand position, extension of the elbows and transfer of body weight	Often used in conjunction with visual to direct learner to important cues Needs to be clear & concise The learner has to understand and relate the information given to the skill being learned **Example**: teacher giving information on tactics or strategies / giving coaching points to focus on e.g. flexed elbows, extend fingers
Advantages	**Advantages**
Disadvantages	**Disadvantages**
Manual Guidance	**Mechanical Guidance**
This involves the teacher/coach holding and physically manipulating the body of the learner through the correct pattern of movement	This involves the use of equipment to help support the learner and shape the skill

Example: teacher supports the learner doing a handstand or guides the learner's arm through a forehand drive in tennis	Example: trampolinist using a harness or a swimmer using floats, arm bands or ring

Advantages

Disadvantages

EXTENSION TASK
Discuss the type/s of guidance that should be used at each stage of learning (Fitts & Posner)

EXAM QUESTION
Manual & mechanical guidance are similar methods widely used by PE teachers & coaches. What are mechanical & manual guidance? What are the advantages of using manual and mechanical guidance for teaching swimming to beginners?
[5 marks]