

## AS and A Level Physical Education (first teaching September 2016)

# GLOSSARY OF TERMS

This AS and A Level glossary should be used in conjunction with the GCSE glossary as it builds on those terms referred to at GCSE.

Please be aware that not all terms contained on this list will be required at AS; any term marked with an \* is required at A Level only.

<b>*Acclimatisation</b>	The effects a training system forces upon the body to compensate for the stresses of a new environment; heat and <b>altitude training</b> .
<b>Action potential</b>	The change in electrical potential associated with the passage of an impulse along the membrane of a muscle cell or nerve cell.
<b>Actin</b>	The thin protein filament found in the myofibril.
<b>*ADP (Adenosine Diphosphate)</b>	The production of energy results in <b>ATP</b> losing a phosphate which in turn results in the formation of ADP.
<b>Aggression</b>	Any form of behaviour that is used to harm another individual.
<b>All or none law</b>	All muscle fibres will be either be contracting or not activated at all. There is no in between <b>action potential</b> .
<b>Amateurism</b>	Participating in sport for pleasure, rather than financial gain.
<b>*Angular momentum</b>	The amount of motion a body or object has during rotation. Angular velocity x moment of inertia.
<b>*Angular velocity</b>	The rate of movement of the body or object in rotation.
<b>Anxiety</b>	A negative side effect of stress; <b>state</b> and <b>trait</b> anxiety.
<b>Arousal</b>	Arousal is your level of excitement and readiness to perform. Your performance will be best at an optimum level of arousal.
<b>Athleticism</b>	Combination of physical endeavour and moral integrity. Mixing honour, truth and sportsmanship.
<b>Atkinson and Shiffren's multi-store memory model</b>	Human memory has three separate components: <b>sensory register</b> , <b>short-term memory</b> and <b>long-term memory</b> .
<b>ATP (Adenosine Triphosphate)</b>	This is the energy source of the body, as it breaks down energy is released.

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<b>*Altitude Training</b>	A performer who exposes their body to high altitude will cause it to <b>acclimatise</b> to the environment that has a lower level of oxygen available. It results in the production of <b>EPO</b> which in turn stimulates the production of more red blood cells which allows the body to deliver more oxygen to the working muscles.
<b>Athleticism</b>	Physical endeavour (effort) with moral integrity (sportsmanship).
<b>Attitude</b>	A stable belief or feeling about something.
<b>Bandura's theory of social learning</b>	Learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement.
<b>*Bandura's theory of self-efficacy</b>	The theory of <b>self-efficacy</b> lies at the centre of <b>Bandura's social cognitive theory</b> . This emphasises the role of observational learning and social experience in the development of the subjects' personality.
<b>*Bernoulli's principle</b>	The relationship between velocity and pressure as they act upon an object as it moves through fluid or air. The principle that in a flowing fluid or air, an increase in velocity happens simultaneously with decrease in pressure.
<b>Biofeedback</b>	A technique that allows performers to control their physiological responses such as heart rate through the use of electrodes.
<b>Borg scale of Perceived Exertion</b>	A measure of how hard you are exercising. The Borg Scale takes into account your fitness level: It matches how hard you feel you are working with numbers from 6 to 20; thus, it is a "relative" scale and unique to each person using it.
<b>Cardiac cycle</b>	The order of events that take place during one heart beat. It includes the diastole and systole phase.
<b>Cardiovascular drift</b>	The increase in heart rate that occurs during prolonged endurance exercise with little or no change in workload.
<b>Centre of mass</b>	The point where all of the mass of the object is concentrated. When an object is supported at its centre of mass there is no net torque acting on the body and it will remain in static equilibrium.
<b>*Chelladurai's multi-dimensional model of sports leadership</b>	The model states that the leader will be more effective if the groups' satisfaction with the leader is high. A team which is not satisfied with its leader will not demonstrate the same level of performance or satisfaction. It takes into account the characteristics of the situation, leader and group members along with the required, preferred and actual behaviour.

<b>Cognitive theory of learning</b>	Learning by observing and copying others.
<b>Concentric contraction</b>	During this muscular contraction the muscle will shorten during the movement.
<b>Continuous skills</b>	This shows movement with no clear start or stop point. The movements blend into each other.
<b>* Craik and Lockhart's levels of processing model</b>	Memory is just a by-product of the depth of processing of information and there is no clear distinction between <b>short term memory</b> and <b>long term memory</b> .
<b>Discrete skills</b>	The movement shows a clear start and end point.
<b>Distributed practice</b>	Attempts at the skill are divided up with intervals in between to allow for rest, feedback and mental rehearsal. This is best used in difficult, dangerous or fatiguing skills and with young or lowly motivated individuals.
<b>Eccentric contraction</b>	During this muscular contraction the muscle will lengthen during the movement.
<b>*Energy continuum</b>	The interaction of the three energy systems to provide energy to re-synthesise <b>ATP</b> . It shows the predominant system or percentage of each system dependant on the intensity and duration of the activity.
<b>Excess post-exercise oxygen consumption (EPOC)</b>	Informally called afterburn and is a measurably increased rate of oxygen intake following strenuous activity intended to erase the body's oxygen deficit.
<b>Ergogenic aid</b>	A technique or substance used for the purpose of enhancing performance.
<b>Extrinsic motivation</b>	Performing for rewards that maybe either tangible or intangible.
<b>Fixator</b>	Muscles that work with the agonist muscle in creating effective movement by stabilising the bones during the movement.
<b>Fixed practice</b>	This involves the repeated practise of a skill in order to strengthen the motor programme and create a habitual motor programme. This type of practice is best with <b>discrete</b> , closed skills.
<b>Games ethic</b>	The belief in games as a vehicle for establishing/ developing social control and character.

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<b>Globalisation</b>	The process by which sport has developed international influence and started to operate on an international scale.
<b>*Glycolysis</b>	Production of four <b>ATP</b> molecules through the breakdown of glycogen into pyruvic acid.
<b>Intrinsic motivation</b>	Performing for the enjoyment and self-satisfaction of challenging oneself.
<b>Isometric contraction</b>	This contraction occurs without any shortening ( <b>concentric</b> ) or lengthening ( <b>eccentric</b> ) of the muscle.
<b>Isotonic contraction</b>	This contraction occurs that allows the muscle to change length; <b>concentric</b> and <b>eccentric</b> contractions.
<b>Karvonen's theory</b>	This uses the heart rate reserve to calculate training zones based on both maximum and resting heart rate.
<b>Lateral rotation</b>	Turning outwardly or away from the midline of the body.
<b>Learned helplessness</b>	Negative feelings from a performer who feels they are going to fail at a task due to previous experiences.
<b>*Linear motion</b>	Movement that occurs along a straight line once a force has been applied.
<b>Long-term memory</b>	The place where information which has been rehearsed in the <b>short-term memory</b> is held indefinitely.
<b>*Magnus effect/force</b>	This is the commonly observed effect in which a spinning ball (or cylinder) curves away from its principal flight path. It is important and used in many ball sports.
<b>Massed practice</b>	This is a continuous form of practice which is best for simple skills. This causes fatigue and therefore simulates the late stages of a game.
<b>Mastery Orientation</b>	Performers who believe they will succeed and who are motivated to improve even when faced with failure.
<b>Medial rotation</b>	Movement of the limbs around their long axis.
<b>Moment of inertia</b>	The torque needed for a desired angular acceleration about a rotational axis.
<b>Motivation</b>	Desire and determination to achieve and succeed; <b>intrinsic</b> and <b>extrinsic</b> .
<b>Motor neurones</b>	Carry signals from the central nervous system to effectors.

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<b>Motor unit</b>	Consists of one <b>motor neurone</b> and the muscle fibres it stimulates.
<b>Myofibril</b>	One of the slender threads of a muscle fibre, composed of numerous myofilaments.
<b>Myoglobin</b>	An iron-containing protein in muscle, similar to haemoglobin, that receives oxygen from the red blood cells.
<b>Myosin</b>	One of the two main proteins of muscle.
<b>National institutes</b>	The network of centres that provide practical support to elite performers. They also identify, confirm and develop talented athletes.
<b>Neurotransmitter</b>	A chemical that is released from a nerve cell which thereby transmits an impulse from a nerve cell to another nerve, muscle, organ, or other tissue.
<b>Newtons 1st law of motion</b>	Law of inertia.
<b>Newtons 2nd law of motion</b>	Law of acceleration.
<b>Newtons 3rd law of motion</b>	Law of reaction.
<b>*Non-parabolic flight path</b>	An object which air resistance affects, reducing the horizontal motion and making it drop soon, like a shuttle cock.
<b>Operant conditioning</b>	A process of shaping behaviour using reinforcement.
<b>Part practice</b>	Breaking down the skill into its constituent sub-routines, forms a stage of the <b>whole-part-whole practice</b> .
<b>*Parabolic flight path</b>	The flight path of a projectile without aerodynamic properties or without spin will fly in a parabolic manner. This means that when drawing the flight path it will look like a curve where the left and right sides match or mirror each other similar to a symmetrical inverted U shape.
<b>Personality</b>	The characterisation of individual differences.
<b>*Phosphocreatine (PC)</b>	This is a substance that, in its chemical partnership with <b>ATP</b> , is fundamental to the ability of the body to produce muscular energy.
<b>PO<sub>2</sub></b>	Partial pressure of O <sub>2</sub> in blood, expressed in kilopascals.

<b>Progressive muscular relaxation (PMR)</b>	A relaxation technique used to monitor and control muscle tension and involves the tensing and relaxing of muscles.
<b>Pre-capillary sphincters</b>	Located at the start of a capillary network and regulates the blood flow in the capillary.
<b>Prime mover</b>	Antagonistic pairs of muscles create movement when one (the prime mover) contracts and the other relaxes.
<b>Professionalism</b>	Being paid to do a job. Initially associated with working class sport as they could not afford time off to play.
<b>Progressive-part practice</b>	Also known as the chaining method, as the parts of a skill are practised individually, in order, before being linked together and expanded. For example in the triple jump, the hop will be practised and learnt, before the skip is then practised and learnt. The two are then linked together. Finally the jump will be learnt individually and then tagged on the end of the skip. Learn part <b>A</b> , then learn part <b>B</b> and link these together <b>A+B = AB</b> . Learn part <b>C</b> & add this to what has already been learnt <b>AB + C = ABC</b> .
<b>Ringelmann effect</b>	The tendency for individual members of a group to become increasingly less productive as the size of their group increases.
<b>*Self-efficacy</b>	An individual's personal estimate of specific confidence in their capability to perform to a certain level.
<b>Sensory register</b>	The place where information from the senses enters the memory store.
<b>Serial skills</b>	A series of <b>discrete</b> skills joined together one after each other.
<b>Short-term memory</b>	Also referred to as working memory and is responsible for receiving and holding input from both the sensory register and the <b>long-term memory</b> .
<b>Social and cultural factors</b>	Features of life and society such as transport, population, literacy, free time, class or technology which affect sport in society.
<b>Social facilitation</b>	An improvement in performance produced simply through others/audience being present.
<b>Social inhibition</b>	A restraint on person's feelings and expressions in the belief that others may disapprove of their behaviour.
<b>Spectatorism</b>	A feature of sports such as football where a larger volume of people watch, rather than participate.

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<b>State anxiety</b>	This is transient and specific only to the particular situation.
<b>Steiner's model of group effectiveness</b>	Actual productivity = potential productivity – faulty group processes.
<b>Stress</b>	A stimulus resulting in arousal or a response to a specific situation.
<b>Sub-routines</b>	The different parts of the skill that when put together in order create the complete motor programme/movement pattern.
<b>Synergist</b>	A muscle which aids the action of a prime mover.
<b>Trait anxiety</b>	This is a general feeling of anxiety that is part of the individual's personality rather than a feeling of anxiety relating to a specific situation ( <b>state</b> anxiety).
<b>Trompomyosin</b>	A muscle protein of the I band that inhibits contraction by blocking the interaction of actin and myosin, except when influenced by troponin.
<b>Tromponin</b>	A protein of muscle tissue that binds calcium ions and is involved in contraction.
<b>UK Sport</b>	Responsible for promoting and supporting sport across the UK. Provides information on sporting activities and initiatives being undertaken by the agency.
<b>Varied practice</b>	This is used best for open skills and involves repeating a skill in differing situations. This helps to build up schema to use in game situations.
<b>Vascular shunt mechanism</b>	Redistribution of blood during exercise.
<b>Vasomotor centre</b>	Found within the medulla oblongata and responsible for monitoring and causing cardiovascular responses of vasodilation and vasoconstriction.
<b>*Vealey's model of sports confidence</b>	The belief or degree of certainty individuals possess about their ability to be successful in sport.
<b>Venous return</b>	Blood returning to the right hand side of the heart from the veins.
<b>VO2 max</b>	Maximal oxygen uptake or the maximum volume of oxygen that can be utilized in one minute.

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<b>*Weiner's model of attribution</b>	Reason for success and failure. How individuals interpret events and how this relates to their thinking and behaviour. Consists of luck, effort, task difficulty and ability.
<b>Whole practice</b>	Teaching the skill as a complete action.
<b>Whole-part-whole practice</b>	You teach the entire skill, practice areas of the skill that is usually the weakest, and then recombine this back into the complete skill.
<b>Zone of optimal functioning</b>	The optimum level of arousal that is unique to all individual sports performers.





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