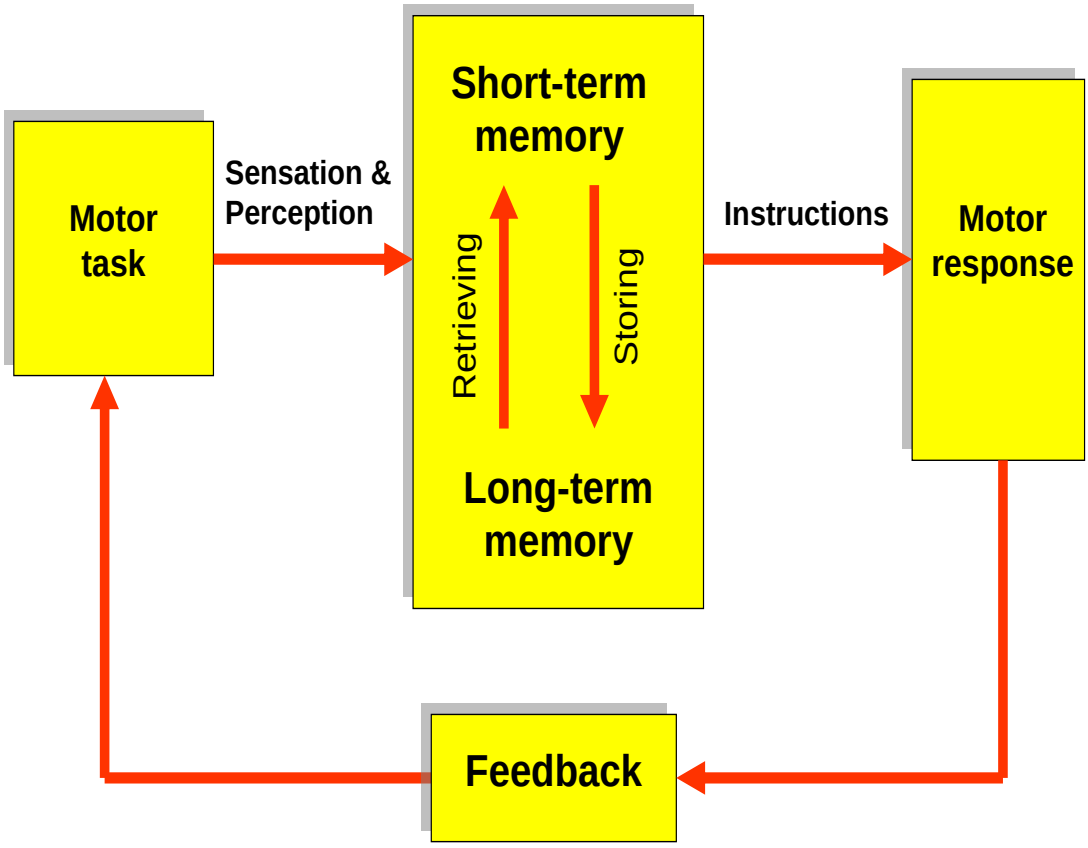
Physical Education (HKDSE)

Part VII: Psychological Skills for P.E., Sport and Recreation



Physical Education Section
Curriculum Development Institute
Education Bureau
The Government of the Hong Kong Special Administrative Region

2026

(last updated in Aug 2026)

Contents	Page

Learning objectives 2

Glossary 3

Essential concepts and theories

A. Application of learning theories in motor learning 7

B. Psychological factors affecting performance 13

C. Application of stress management in sport 22

Examples of enquiry activities 25

References for teachers 29

References for students 31

Related websites 32

Learning Objectives

This part helps students understand the psychological aspects of PE, sport and recreation, and covers theories of motor learning, factors affecting sports performance and stress management. This part is directly linked to the practicum (Part X). The knowledge and skills acquired in this part also help students explain and regulate the process of motor learning and enhance their sports performance.

Expected learning outcomes: Students will be able to

1. record and demonstrate the progress of motor learning using appropriate methods;
2. illustrate the characteristics of various stages of learning and adopt suitable practice schedules and feedback delivery methods for each stage;
3. conduct a case analysis of the factors affecting physical performance and make recommendations; and
4. conduct a case analysis of the sources of stress and make recommendations.

Glossary

	Term	Description
1.	Aggression 攻擊行為 / 侵略行為	Physical or verbal behaviour with an intention to harm others.
2.	Anxiety 焦慮	A state of high arousal accompanied by negative feelings such as worry and nervousness.
3.	Arousal 喚醒	The "energised" state of a person. It varies along a continuum ranging from deep sleep to extreme excitement.
4.	Assertiveness 進取行為 / 進取心 / 果敢行為	Playing with high intensity and emotion but with no intention to harm others.
5.	Attention 注意 / 注意力	Selectively focusing on some of the information in the environment.
6.	Closed skills 封閉技能	The pre-planned movements which are performed in a predictable environment.
7.	Concentration 專注 / 專注力	Maintaining an attentional focus over time.
8.	Continuous skills 連續技能	Skills with no definite beginning or end.
9.	Discrete skills 分立技能	Skills with a distinct beginning and end.
10.	Distributed practice 分散練習	Scheduling relatively long rest periods between practice trials, blocks or sessions.

Glossary

	Term	Description
11.	External imagery 外部表象 / 外部意象 / 外在表象 / 外在意象	A kind of imagery as if one was "watching" another person performing the movement on video.
12.	Extrinsic feedback 外在回饋	It comes from outside sources and is about the effect or the quality of performance.
13.	Extrinsic motivation 外在動機	Exerting effort to obtain some benefits, for example, medals, monetary rewards, praise, etc.
14.	Feedback 回饋	The evaluative information about performance.
15.	Fine motor skills 精細動作技能	Skills that involve the use of small muscle groups.
16.	Frustration 挫折	An emotional response to circumstances when one is obstructed from achieving a personal goal.
17.	Gross motor skills 粗大動作技能	Skills that involve the use of large muscle groups.
18.	Imagery / Mental practice / Mental rehearsal 表象訓練 / 意象訓練 / 心理練習 / 心理演習	Creating or recreating an experience in the mind.

Glossary

	Term	Description
19.	Internal imagery 內部表象	One is "experiencing" the execution and effectiveness of a movement from one's own perspective through the senses of sight, hearing, touch, taste and smell.
20.	Intrinsic feedback 內在回饋	The performer's "feel" of a performance, and is the sensory information that arises as a natural consequence of producing a movement.
21.	Intrinsic motivation 內在動機	Being attracted to or exerting effort on an activity because of the enjoyment or interest in it.
22.	Massed practice 集中練習 / 密集練習	Undergoing many practice trials, blocks or sessions within a short period of time.
23.	Mindfulness 靜觀	Mindfulness means paying attention to the present moment purposefully and non-judgmentally. It is about having self-awareness and compassionate acceptance of all the experiences, including thinking, feeling and body sensation, one will have in the present moment.
24.	Motivation 動機	The direction, duration and intensity of an effort.
25.	Open skills 開放技能	Skills are performed in a constantly changing environment; and therefore adjustment is required.
26.	Part method of practice 分部練習法	Breaking a complex skill into several parts, learning the parts one by one and then linking them together.
27.	Personality 個性 / 性格	The psychological characteristics that make a person unique.
28.	Practice 練習	The execution of a skill for learning.

Glossary

	Term	Description
29.	Proprioceptor 本體感受器	The receptor in the muscles, ligaments and joints which is responsible for giving feedback to the brain and spinal cord about the sense of position.
30.	Psychological skills 心理技能	The methods that improve performance or psychological wellness through adjusting the way how one behaves or thinks.
31.	Psychology 心理學	The systematic and scientific study of behaviour and mental processes.
32.	Sport psychology 運動心理學	An interdisciplinary science, including biomechanics, physiology, kinesiology and psychology. It involves the study of how psychological factors affect performance and how participation in sport and exercise affect psychological and physical factors.
33.	Self-confidence 自信 / 自信心	The belief in one's ability to perform the desired behaviours.
34.	Serial skills 系列技能	A group of discrete skills linked together with a distinct beginning and end.
35.	Stress 壓力	A person will experience stress if both of the following two conditions exist: (a) perceiving that his / her capability cannot meet the task demand, and (b) thinking that failure to meet the task demand will have serious undesirable consequences.
36.	Transfer of learning 學習轉移 / 學習遷移	The influence of previous experience on learning or performance in a new situation.
37.	Whole method of practice 完整練習法	The entire skill is performed in practice as a single unit.

Essential Concepts and Theories

A. Application of learning theories in motor learning

A skill is an athlete's ability to choose and perform the right techniques at the right time, successfully, regularly and with a minimum of effort.

Factors affecting skill performance include three elements:

1. Perception with the relevant environmental characteristics
2. Decision-making during the sports situations
3. A series of muscular control to perform a specific task

i) Skill classification

With knowledge of skill classification, we can determine the characteristics of individual skills for choosing the right learning methods. Motor skills can be classified in the following ways:

Classified by	Categories	Examples
Function of the motor skill	• Locomotor skills • Non-locomotor skills or stability skills • Manipulative skills	• Walking, running • Handstand, twisting • Dribble the ball past the defender in a football match
Whether fine or gross muscles are used	• Fine motor skills • Gross motor skills	• Playing the piano, using the keyboard • Walking, running, jumping.
Characteristic of the feedback loop	• Closed skills (not affected by the environment) • Open skills (affected by the environment)	• Bowling, snooker • Dribble the basketball past the defender
Cyclic property of the motor skill	• Discrete skills • Serial skills • Continuous skills	• Handstand, twisting • High jump • Running, walking, swimming
Complexity of the motor skill	• Simple skills • Low organisation complex skills • High organisation complex skills	• Single leg stance • Penalty kick • Approach run with jumping to the bar

ii) Skill acquisition and information processing

- Information processing involves the input, central decision-making process, output and feedback, as shown in *Fig. 7.1*.
- In an information processing model, the process of skill acquisition is described as follows:
  - A motor task, the input, is perceived and a motor response, the output directed by the central nervous system, is generated.
  - After executing the motor response, all the related information, including the perceived requirements of the motor task, neuromuscular control instructions from the central nervous system and feedback (both internal and external; please refer to section A(iv) of this part for more details), is stored in the long-term memory in the form of a motor programme.
  - Next time when the same or a similar motor task is perceived, the corresponding motor programme is retrieved to generate a motor response; the motor programme is then refined according to the new information received and is then stored in the long-term memory.
  - At the early stage of skill acquisition, the central nervous system has to identify an appropriate motor programme or fine tune the neuromuscular control instructions, which have been built in the motor programme previously, to cope with new situations. These explain why there are delays or errors in the motor response. As we accumulate more experience, the motor programme operates in a highly autonomous manner and needs minimal involvement of the central nervous system.
- Skill acquisition is characterised by:
  - Gradually improved muscular coordination; increasingly enhanced movement effectiveness and efficiency.
  - Gradually developed motor programme; increasingly consistent movement performance.
  - Gradually reduced cognitive control; increasingly automated movements.
  - Greater ability to identify minor differences in movements.
  - Greater ability to use subtle cues to refine movements.
  - Greater reliance on kinesthetic feedback to refine motor performance.

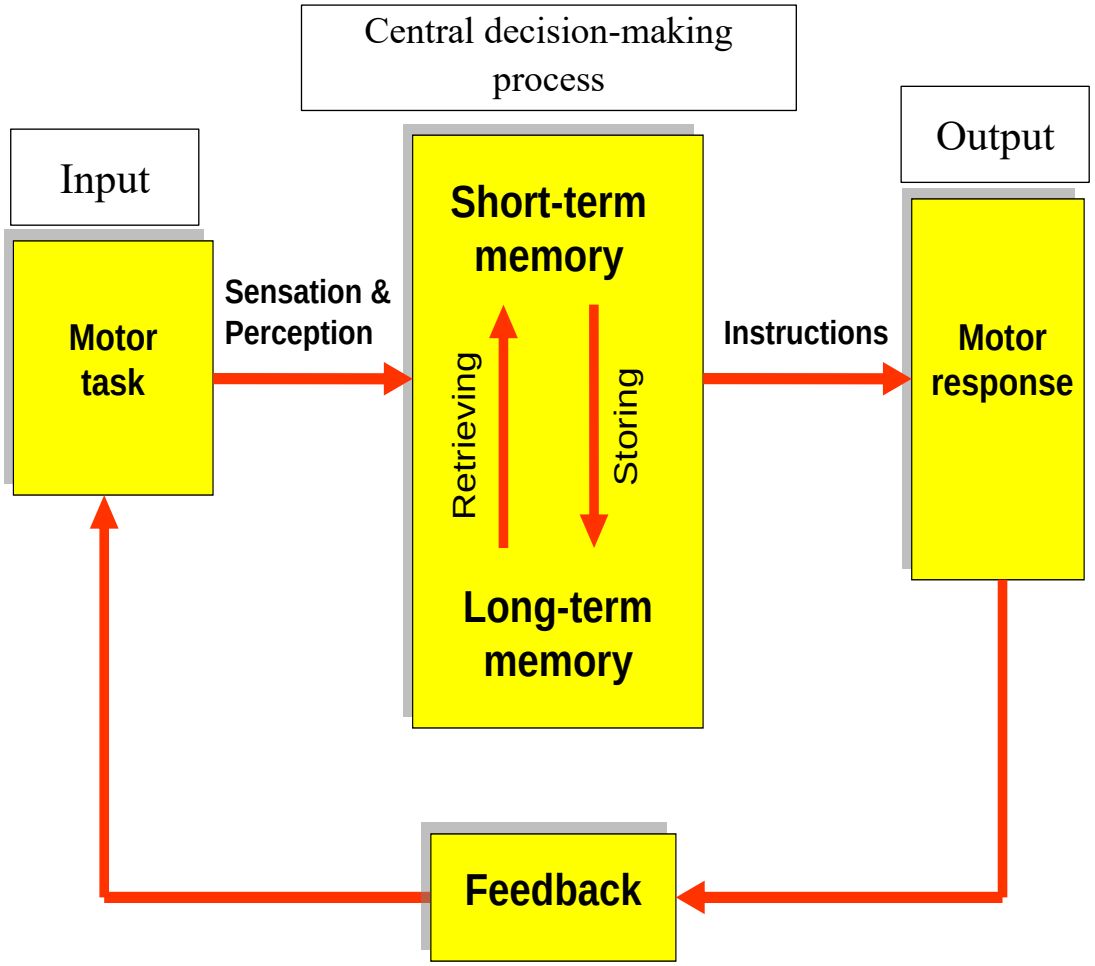


Fig. 7.1 Information processing

iii) Stages of learning and the transfer of learning

- **Stages of learning** (can be divided into the following three stages):

  - **Cognitive stage** - At this stage, the learner is trying to familiarise himself / herself with the basic movements of the skill. The learner needs to process a lot of information from visual, verbal and kinesthetic feedback.

  - **Motor stage** - At this stage, the learner begins to integrate discrete actions into a set of serial actions. There are improvements in consistency, anticipation and timing. The focus of this stage is to emphasise the refinement of the skill.

  - **Autonomous stage** - The performance of a skill is automatic and is performed smoothly with little chance of error. The performer can process information easily and the emphasis is placed on the strategic aspect of the performance.

- **Transfer of learning**

  Transfer of learning is defined as the influence of previous experience on learning or performance. Learning is faster and more effective when a positive transfer of learning occurs. There are:

  - **Positive transfer** - "Similar elements" exist, as in performing a tuck forward roll and a straddle forward roll. The previous experience enhances learning or performance.

  - **Negative transfer** - "Different elements" exist, the previous experience interferes with learning or performance. For example, the muscles used in table-tennis and tennis are differently coordinated, which hinder the learning or performance; the sizes and shapes of basketball and rugby ball are different, which affect the passing skills.

  - **Zero transfer** - Previous experience does not have any influence on learning or performance. For example, learning to swim and playing table-tennis do not affect each other.

iv) Intrinsic and extrinsic feedback

Feedback refers to the evaluative information about performance. It is both informative and motivational, and is very important for learning. Feedback can be intrinsic or extrinsic:

- **Intrinsic feedback -** It is about the performer's "feel" of the performance. For example, during the vibrations of a racket when a ball is hit off-centre, the performer's proprioceptors and various senses provide the feedback.
- **Extrinsic feedback -** It comes from outside sources and is about the effect or the quality of performance. The following extrinsic feedback is useful in the learning process:
  - **Knowledge of results (KR)** - It is about the results of the execution of a skill, for example, the speed of a 100m run, the height of a somersault, etc.
  - **Knowledge of performance (KP)** - It is about the quality of movement. These are commonly labelled as positive feedback (i.e. about what has been done correctly), negative feedback (i.e. about what has been done incorrectly) or corrective feedback (i.e. about what should be done for improvement).

Points to note when using feedback:

- **Learning skills:**
  - Collect as much extrinsic feedback as possible at the beginning stage of skill learning but gradually shift to reliance on intrinsic feedback as the skill proficiency increases.
- **Helping other people learn skills:**
  - As far as possible, use positive feedback and corrective feedback to enhance learning. Negative feedback should be used cautiously because it does not tell "what to do" and may cause stress in the learning process.
  - Provide specific feedback, for example, "arm-swing is useful to assist jumping" instead of "a good jump".
  - Feedback should be provided timely.

v) Practice methods

Practice refers to the execution of a skill for learning. When planning practice, the following points should be noted:

- **Individual needs and characteristics of learners should be considered.** Employ individualised practice to cater for different needs and characteristics. For example, some learners may benefit more from the massed practice (i.e. undergoing many practice trials, blocks or sessions within a short period of time), whereas for other learners, the distributed practice (i.e. scheduling relatively long rest periods between practice trials, blocks or sessions) may be more effective.
- Construct **learning curves** to monitor the progress *(Refer to Fig.7.6 and 7.7 for examples of developing learning curves).*
- Do adequate **warm-up** and **cool-down** activities in each practice session.
- Supplement physical practice with **imagery / mental practice** *(Refer to section B(v) of this part for more information on imagery).*
- Identify and practise the relevant skills learnt for **transfer of learning**.
- Break a complex skill into **parts,** learn the parts one by one and then link them together, this is "part method of practice".
- Progress to **simulated** competitions / game situations as soon as the basic skills have been acquired.
- Repeatedly rehearse a skill and use it in various situations for **overlearning** (i.e. well beyond the point of initial mastery, leading to automation).
- Include **assessment for learning** in each practice session (for example, acquiring knowledge of performance through peer observation).
- Go through a **reflective thinking** process after each practice session to generalise or adjust learning strategies.
- Use **information technology** and **scientific equipment** to assist learning when appropriate.

B. Psychological factors affecting performance

The four major winning elements in competitive sport: skills, tactics, physical fitness and psychology. In high-level competitions, the psychological factors often become the most critical factors.

i) Arousal and anxiety

Arousal refers to the "energised" state of a person. It varies along a continuum ranging from deep sleep to extreme excitement. The "Inverted-U hypothesis" suggests that both underaroused and overaroused athletes cannot perform well *(See Fig. 7.2a)*. However, the following should be noted:

- The optimal level of arousal does not always occur at the midpoint of the arousal level continuum; it may be nearer to the lower end, at the midpoint or nearer to the upper end. *Fig. 7.2b* shows that the optimal levels of athletes A, B and C are different; *Fig. 7.2c* shows that a person's optimal level of arousal in different tasks may vary.
- The optimal level of arousal may not be a single point but a zone with its width varying from individual to individual (See *Fig. 7.2b*).

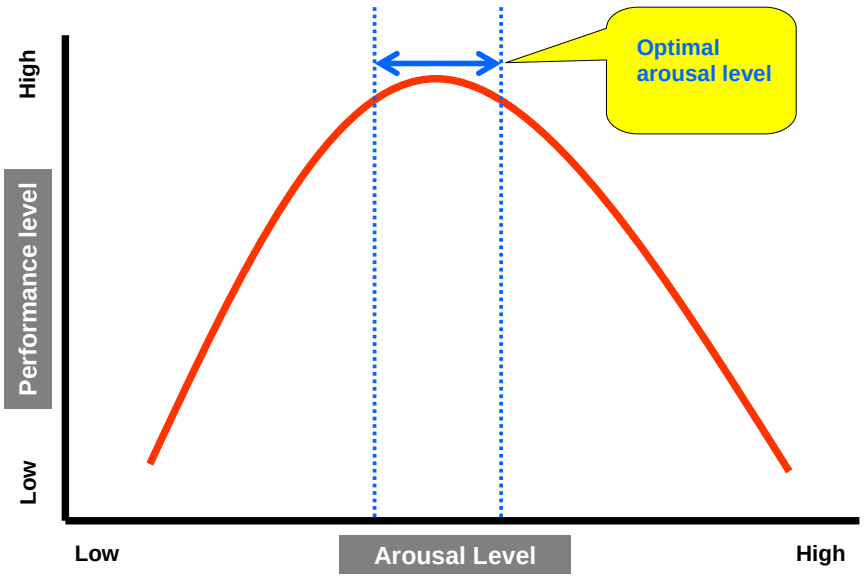


Fig. 7.2a

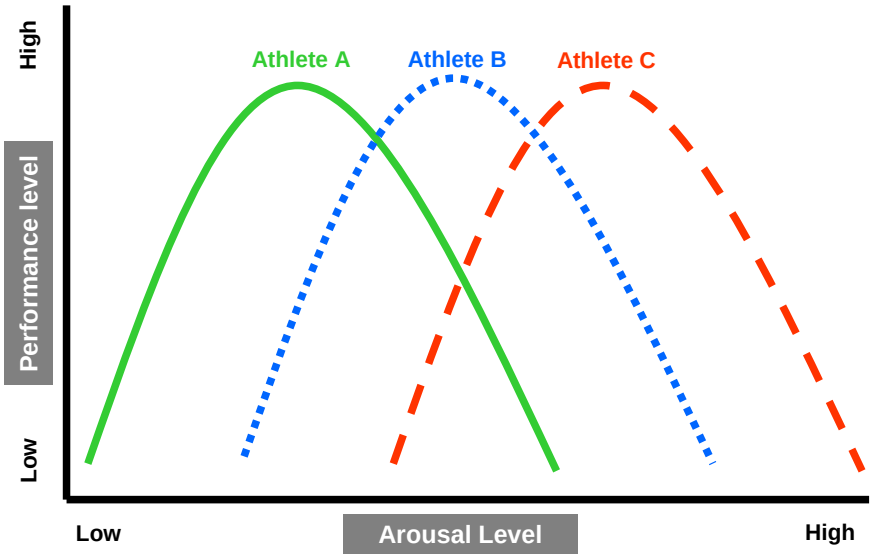


Fig. 7.2b

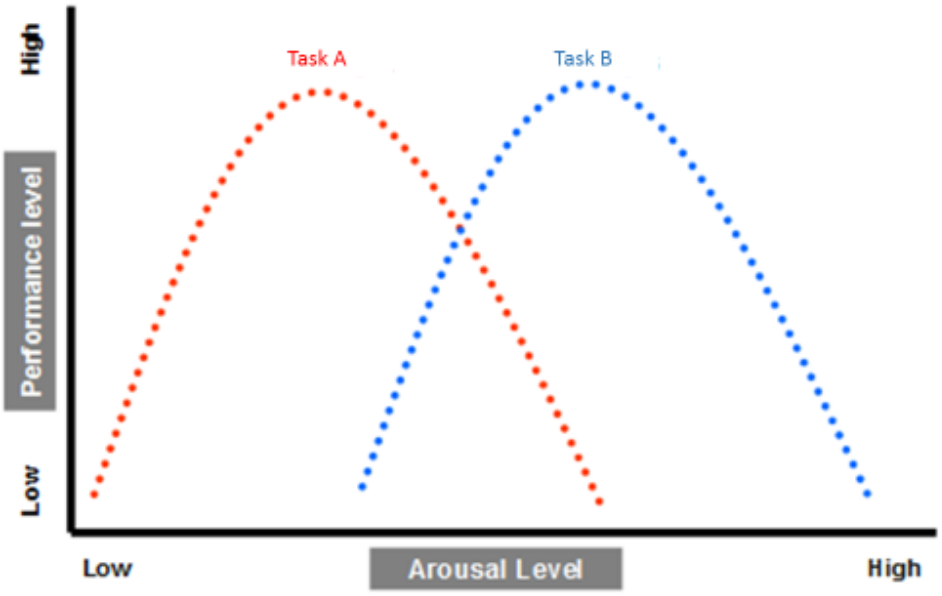


Fig. 7.2c

Fig.7.2 Arousal and performance: the inverted-U hypothesis

Anxiety - Although the term is sometimes used interchangeably with "arousal", it is confined to situations of high arousal accompanied by negative feelings such as worry and nervousness. In sport, anxiety is very often caused by competitive stress and is related to the importance of the event, uncertainty of the environment, personality, self-confidence, etc. The stress management skills mentioned in Section C of this part are relevant.

When one is **underaroused** and wants to **psyche up**, (i.e. to increase arousal to the optimal level), he / she may try the following:

- Take short and deep breaths to activate the mental state.
- Become energetic through warm-up exercises or a pre-competition workout.
- Say or think positive mood words (for example, "Go! Go! Go!") and positive statements (for example, "I can").
- Listen to music with strong rhythm.
- Practise energising imagery.

When one is **overaroused** and wants to **relax**, he / she may try the following:

- Smile.
- Slow down.
- Take a deep and slow breath.
- Focus on the present; do not think about what has just happened and what will happen.
- Perform relaxation imagery.
- Enjoy the present situation.

ii) **Attention and concentration**

Attention refers to selectively focusing on some of the information in the environment. To perform well in physical activities, one needs to pay attention to the following principles:

- **Select the relevant cues and ignore the irrelevant cues.**

Interestingly, when one is underaroused, he / she may attend to both relevant and irrelevant cues. When one is overaroused, he / she may ignore some of the relevant and important cues. Only when one is optimally aroused, he / she will be able to focus on the relevant cues and ignore the irrelevant cues.

- **Switch from one attentional focus to another.**

When one's arousal level is optimal or low, he / she can effectively switch the attentional focus from one to another. However, when one is overaroused, he / she may fix on one particular attentional focus and miss other relevant cues.

Concentration refers to maintaining an attentional focus over time. There are many visual and auditory distractors in the environment competing for one's attention. Apart from the distractors in the environment, people are also distracted by things in their mind and body; for example, past events, future events, importance of the competition, minor technical details for skill execution, evaluation by coaches and peers, fatigue, injury, etc. To enhance concentration, we may try the following methods:

- Train more in simulated competition situations.
- Familiarise with the movement routines to be followed in the game.
- Develop pre-competition and competition plans and anticipate what cues to attend to.
- Use self-talk to remind us of what cues to attend to.
- Focus on the present, not the past or future.
- Focus on how to make adjustment, not on good or bad performance.

iii) Motivation and self-confidence

Motivation is related to the intensity, direction and duration of effort. It can be extrinsically driven, implying that the individual exerts effort to obtain some benefits (for example, medals, monetary reward, praise, etc.). On the other hand, the intrinsic motivation is aroused by an interest in the activity and the enjoyment gained from it.

Self-confidence refers to one's belief in one's ability to perform the desired behaviours. It is gradually developed through successful experience. One commonly cited reason by kids for not participating in physical activities is "I am not the sporty type". Apparently, self-confidence affects one's motivation to participate in physical activities. Therefore, it is important to let the participants gain a sense of satisfaction and building up self-confidence. Then they will be intrinsically motivated in the activities. The following are some methods of building up self-confidence:

- Acquire successful experiences through setting appropriate goals *(Refer to section (iv) of this part for more information on goal setting)*:
  - setting realistic and achievable goals;
  - setting short-term goals so that it is easier to identify progress and feel the success; and
  - setting process goals and performance goals; and
  - emphasising on "achieving success through working hard".
- Be well prepared for the challenges by enhancing their physical abilities, skills and tactics.
- Learn to build up a confident image in competitions (for example, keeping the head up, shoulders back, facial muscles loose even after making a critical error, etc.).
- Discard negative thoughts (for example, I am afraid that I may make mistakes), replace them with positive thoughts (for example, I have taken plenty of practices; it is unlikely that I will make mistakes) and then strengthen the positive thoughts through repeated practice in imagery and self-talk (refer to section (v) of this part for more information on Imagery and mental practice).

iv) **Goal setting**

When carried out effectively, goal setting can help a performer to concentrate, raise self-confidence, enhance motivation and ultimately bring about a positive effect on performance. *Table 7.1* shows three types of goals in physical activities.

Type	Focus	Key to success	Example
Outcome goals	Competition results	Depends on the performance of the opponents	Winning the overall championship
Performance goals	Meeting standards / criteria	Effort; independent of the performance of other competitors	Completing a 1500m run in 4 minutes and 30 seconds
Process goals	Actions that lead to good performance	Effort; independent of the performance of other competitors	Maintaining a correct form of arm swing during the 1500 m race

Table 7.1 Types of goals

The following are some guidelines on goal setting:

- Set specific goals with timelines.
- Set goals which are challenging but achievable.
- Develop performance indicators for the goals, i.e. clearly describe what actions to be taken under certain conditions.
- Break the long-term goals into several short-term goals in different stages.
- Set the process goals and performance goals, and fewer or even no outcome goals.
- Set goals for practice and competition.
- Develop the goal achievement strategies.
- Display the goals at eye-catching spots where they can be seen frequently.
- Do not set too many goals.
- Review the goals from time to time and make adjustment when necessary.

v) **Imagery**

Imagery, also labelled as "mental practice" or "mental rehearsal", refers to "creating or recreating an experience in the mind". It can be "external" or "internal".

- **External imagery** – It is a kind of imagery as if one was "watching" another person performing the movement on video.
- **Internal imagery –** One is "experiencing" the execution and effectiveness of a movement from one's own perspective through the senses of sight, hearing, touch, taste and smell.

Both kinds of imagery are useful and can help acquire sports skills or strategies, improve concentration, build confidence and control emotional responses, etc. To maximise the learning effect of imagery, one should note the following:

- Begin practising imagery in a setting with no distractions and then gradually learning to apply imagery in real competition situations.
- Perform relaxation exercises such as deep breathing, progressive relaxation, etc. before applying imagery.
- Try to feel the movements as if they were actually occurring.
- Move and position the body as if one was actually performing the movement. This can make the imagery more vivid.
- Learn to do imagery with eyes open and closed as well.
- Imagery should include both the execution and outcome of the movement.
- Work on controlling images to follow one's instructions and create or recreate a desired experience.
- The speed of the movement in the imagery should be adjusted to the actual movement in real situation.

vi) **Personality**

Personality refers to the psychological characteristics that make a person unique. In general, high-level athletes are low in tension, depression, fatigue, confusion and anger, but high in vigour. The high-level athletes, in particular, do better in coping with adversity, are able to display peak performance under pressure, concentrate on their tasks, and have high self-confidence. Although it is clear that having the above-mentioned personality traits is an advantage for excelling in sport, it is believed that these traits are developed as athletes undergo very tough training and competitions.

Fig. 7.3 The personality traits of high-level athletes can be developed through tough training

vii) Aggression and assertiveness

In ball games involving body contact, like football, collision is inevitable. To determine whether the collision is **aggression** or **assertiveness**, we need to assess the players' motive. If the players are playing with high intensity and emotion without intention to harm others, it is considered as assertive behaviour; if the players intentionally harm other persons, whether it is physical (for example, an intentional foul) or verbal (for example, verbal abuse towards referees), it is considered as aggressive behaviour.

The main causes of aggressive behaviour are:

- **Frustration** – It increases an individual's arousal and anger which in turn increases the likelihood of aggression;
- **Personality** – Athletes who get angry easily tend to have low tolerance for frustration. They always see situations in a hostile manner; and
- **Belief** – Many athletes view some aggressive acts as inappropriate in daily life but acceptable in sports contexts.

Aggression not only poses risk of injury and harm but also impairs sports performance because it elevates arousal beyond the optimal level and shifts one's attention to non-performance issues. Most importantly, aggression is considered as unsportsmanlike conduct and must be forbidden. Athletes should learn how to control their emotions. The following are some suggestions:

- Slow down. Think twice before you act.
- Breathe deeply and repeat the calm word or phrase such as "relax", "take it easy", "no big deal", etc.
- Remind yourself that getting angry is not going to fix anything and will not make you feel better.
- Understand that aggression is unsportsmanlike and will lead to punishment.
- Get back to your position and focus on the next move as soon as possible.

C. Application of stress management in sport

i) The nature of stress (See *Fig. 7.4*)

- A person will experience stress if both of the following two conditions exist:

  (a) perceiving that his / her capability (for example, skills, knowledge, physical conditions, etc.) cannot meet the task demand (for example, beating the opponent in a competition); and

  (b) thinking that failure to meet the task demand will lead to serious undesirable consequences.

- To determine whether or not the capability can cope with the task demand is a subjective judgment which may be affected by factors like personality, experience, self-expectation, etc.

- Stress can induce physiological responses (i.e. heightened arousal) or psychological responses (for example, anxiety, fear, depression, etc.) or both.

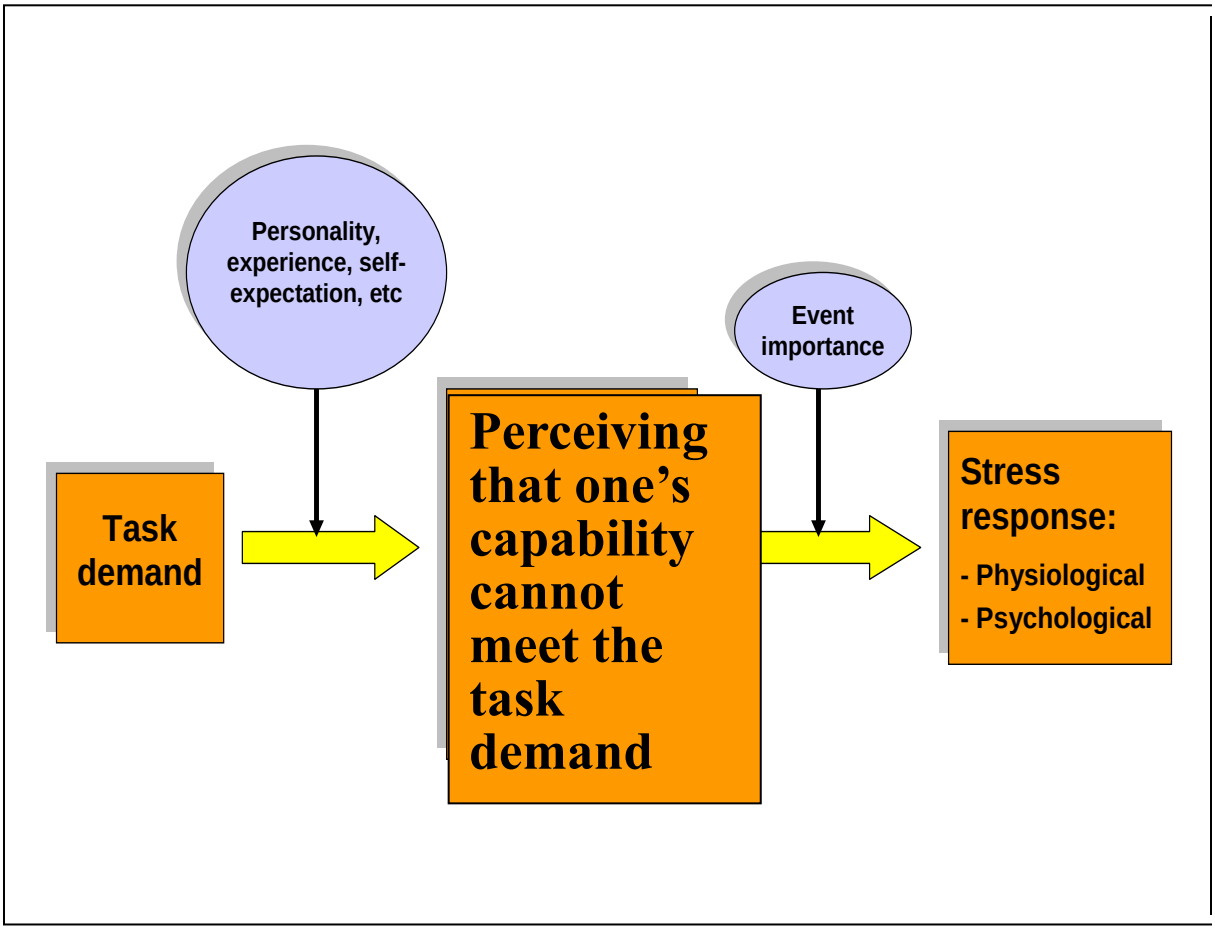


Fig. 7.4 The nature of stress

ii) **Stress management**

- Relaxation - The most important strategy in stress management is to relax. The following points mentioned in section B(i) of this part are relevant:
  - Smile
  - Slow down.
  - Take a slow and deep breath.
  - Focus on the present; do not think about what has just happened and what will happen.
  - Do relaxation imagery.
  - Enjoy the present situation.

When one is very stressful, it is not easy to relax. Therefore, the relaxation training is necessary. Some examples of relaxation training are as follows:

- **Practising the progressive muscle relaxation** – To acquire the feeling of relaxation through firstly tensing and then relaxing muscles continuously.
- **Biofeedback** – To learn how to relax the specific muscles with the assistance of an apparatus that can monitor somatic responses (for example, the heart rate, respiration rate, muscle tension, etc) (See *Fig. 7.5*).

Fig. 7.5 An example of biofeedback equipment

- **Imagery** – To imagine how to accomplish the task in a fully relaxed way.
- **Meditation** – To concentrate on a specific word or object so as to reach a state of calmness.
- **Mindfulness Exercise** – Practising mindfulness involves breathing methods, guided imagery, and other practices to relax the body and mind and help reduce stress.

- **Positive thinking** – Stress is psychological in nature. Positive thinking may help. Examples of positive thinking include:
  - View the challenges as the learning opportunities and earn experiences to improve the performance in the future.
  - Believe that preparing thoroughly and trying one's best shall suffice and there should be no regret.
  - Reassessing the event importance from a more macro perspective. For example, an "important" competition will become less important when it is considered as one of the many important competitions that one will undergo in his / her life.
- **Share with others** – It is also wise to actively share the stressful feelings with parents, friends, classmates and teachers and seek their advice or support.

Examples of Enquiry Activities

Themes		Activities
1	Learning curves	Information collection: ● Mark on a wall a target about 1 square metre in area and 2 metres high from the ground. Students are required to hit the target by bouncing a tennis ball with their non-dominant hand (非慣用手) from a distance of 5 metres from the wall. • Each practice set comprises five trials; perform 20 trials at a time, with a two to three-minute rest between sets; practise 10 sets each day for two consecutive days. • Produce a learning curve (*See Fig. 7.6*) – mark the results of each set (number of hits on the target) on a piece of graph paper. Reflection: • When did the best and the worst results occur? Why? • In which set can you observe the fastest learning progress? Why? • In which set can you observe the slowest learning progress? Why? • Have you used any learning strategies in the process? Do they work? Why? • What learning stage did you reach after 100 trials in two days? Please provide evidence. • Suppose you are going to help other people to learn the skill, what are your recommendations?

Themes		Activities
2	Feedback delivery	Information collection: • The students are grouped in 3 teams. The content and arrangements for learning are the same as exercise 1. However, students are required to wear a blindfold, so that they need augmented feedback provided by partners in the learning process. • Each team provides different feedback to the performer: 1. Team 1: whether or not the target is successfully hit. 2. Team 2: whether or not the target is successfully hit; and the deviance in terms of position and distance. 3. Team 3: whether or not the target is successfully hit; the deviance in terms of position and distance; and also hints on how to adjust the body movement. • Produce a learning curve to show the performance of each team. (*See Fig. 7.6 and 7.7*) Reflection: • What would happen if no feedback was provided in the exercise? Why? • Members of Team 3 received three pieces of feedback information. Compare the similarities and differences and the effects of the 3 types of feedback. • Based on the data collected, is there any evidence showing that people at different stages need different types of feedback? Suggest an experiment to further investigate this issue.

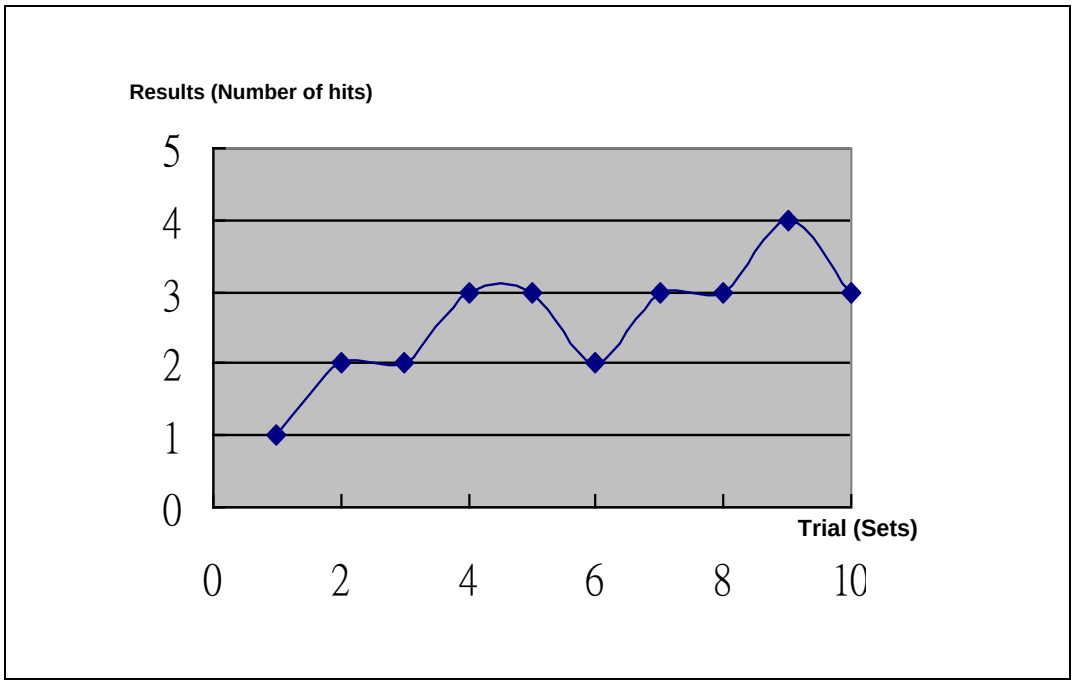


Fig. 7.6 Example of a learning curve (I)

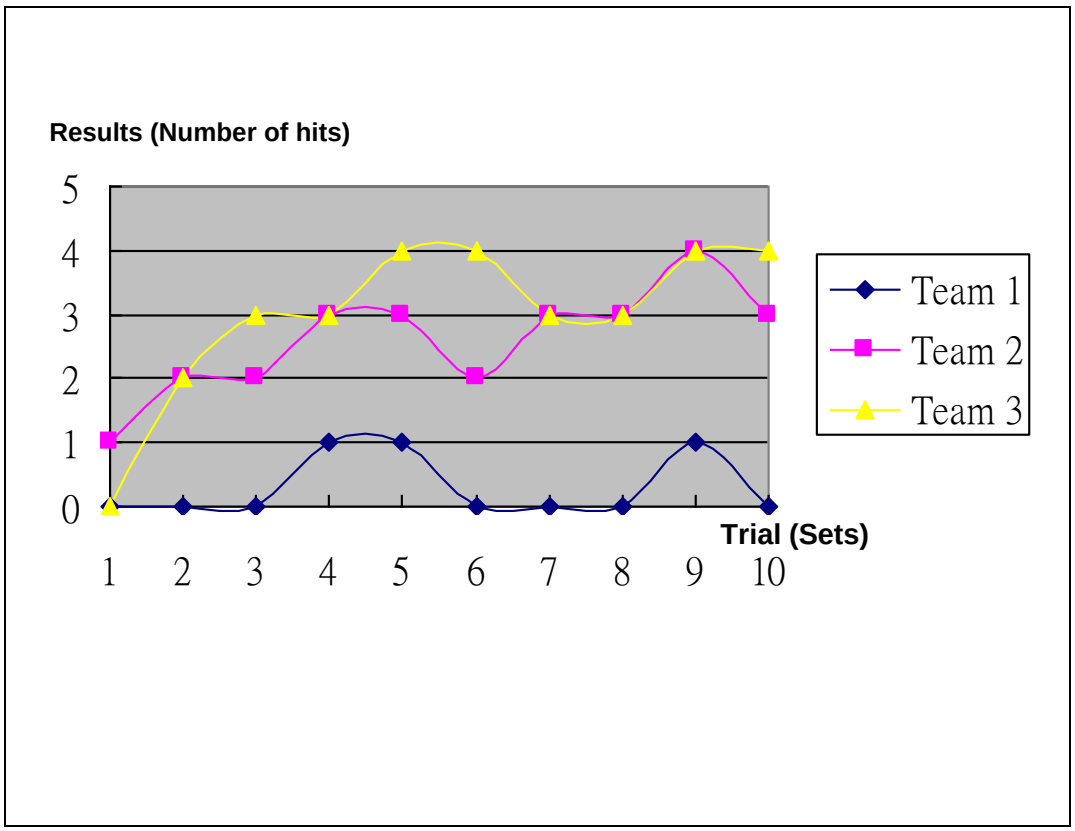


Fig. 7.7 An example of a learning curve (II)

Theme		Activities
3	Stress management	Information collection: • Browse relevant websites and study - the design of different types of biofeedback equipment - how the world-class athletes cope with the stress induced by competitions • Try the progressive relaxation; record what you felt physically and psychologically. Reflection: • Working with partners, share with them your experience in handling stress management, and help each other to analyse the sources of stress and develop the coping strategies.
4	Imagery	Information collection: • Perform an imagery on a self-selected skill for one to two minutes; one practice set should comprise three trials; complete 10 sets each day for seven consecutive days. • Record the characteristics of the imagery, including the vividness (for example, colour, sound, etc), continuity, reality and perspectives (internal vs external). Reflection: • What were the changes in the vividness of the imagery after the practice series? • Was the imagery useful in enhancing physical performance? Why? • Collate the data of the whole class and explore the relationship between the imagery and the skill classification (open or closed skills).

References for Teachers

Carron, A.V., Hausenblas, H.A., & Estabrooks, P.A. (2003). *The psychology of physical activity.* NY: McGraw-Hill.

Greenberg, J.S. (2002). *Comprehensive stress management.* Boston: McGraw-Hill.

Hausenblas, H., & Rhodes, R. E. (2016). *Exercise Psychology: Physical Activity and Sedentary Behavior.* Burlington, MA: Jones & Bartlett Learning.

Jon Kabat-Zinn (2016). *Mindfulness for Beginners: Reclaming the Present Moment and Your Life.* Sound True Inc.

Magill, R.A., & Anderson, D. (2017). *Motor learning and control: Concepts and application* (11th ed.). Boston: McGraw-Hill.

Murphy, S. (Ed). (2005). *The sport psych handbook.* Champaign, IL: Human Kinetics.

Roberts, G.C. (2012). *Advances in motivation in sport and exercise.* Champaign., IL : Human Kinetics

Schmidt, R.A., & Lee, T. (2019). *Motor learning and performance: From principles to practice* (6th ed.). Champaign, IL: Human Kinetics.

Weinberg, R.S., & Gould, D. (2003). *Foundations of Sport and Exercise Psychology* (3rd ed.). Champaign: Human Kinetics.

Weinberg, R. S., & Gould, D. S. (2019). *Foundations of Sport and Exercise Psychology* (7th ed.). Champaign, IL: Human Kinetics.

Whetten, D.A., Cameron, K., & Woods, M. (1996). *Effective stress management.* London: HarperCollins Publishers.

Williams, J.M. (2006). *Applied sport psychology: Personal growth to peak performance.* Boston: McGraw-Hill.

吳萬福 (2003)《新運動心理》。台北：師大書苑。

姒剛彥 (2007)〈第 19 屆亞洲保齡球錦標賽運動心理學家工作手記(上)〉,《中國運動醫學雜誌》，26(3)，360-363。

姒剛彥 (2007)〈第 19 屆亞洲保齡球錦標賽運動心理學家工作手記(下)〉,《中國運動醫

學雜誌》，26(4)，488-492。

孫青、張力為 (2006) 〈別對我期望太高：運動領域中的自我設限〉,《心理科學進展》，14(6)，956-960。

張力為、林嶺、趙福蘭 (2006)〈運動心理疲勞：性質、成因、診斷及控制〉,《體育科學》，26(11)，49-56。

黃日明 (2001)《相約在頒獎台：香港體壇的女兒》。香港：體院匯友社。

鍾伯光、姒剛彥、李慶珠(2006) 〈影響香港運動員在重大國際比賽中運動表現的因素研究〉,《體育科學》，26(12)，42-47。

鍾佳宜 (譯) (1998)《生活中的運動家：心靈運動：徹底激發你的潛能》。台北市：海鴿文化出版 (Millman, D., 1998)。

卓俊伶等（譯）(2016)《動作發展：終身觀點 Life Span Motor Development (6th ed.)》。台北市：禾楓書局 (Haywood, K., & Getchell, K., 2016)

卓俊伶等（譯）(2017)《動作學習與表現：從原則到應用 Motor Learning and Performance: From Principles to Application (5th ed.)》。台北市：禾楓書局 (Schmidt, R. A., & Lee, T. D., 2017)

卓俊伶等 (譯) (2015)。動作控制與學習。新北市：合記。(Schmidt, R. A., & Lee, T. D., 2011)

季力康等（譯）(2015)《競技與健身運動心理學 (3 版) Foundations of Sport and Exercise Psychology (6th ed.)》。台北市：禾楓書局 (Weinberg, R. S., & Gould, D., 2015)

張育愷等 (譯) (2016)。《健身運動心理學論與實務的整合》。臺北市：禾楓。(Lox, C. L., Martin Ginis, K. A., & Petruzzello, S. J., 2014)

張育愷等 (譯) (2015)。《教練的競技運動心理學》。臺北市：易利圖書。(Burton, D., & Raedeke, T., 2008)

彭譯箴 (2015)。正念與運動表現：賽前狀態焦慮 的中介效應。《臺大體育學報》，29，1-13。

盧俊宏、余清芳、余致萱 (2016) 。止觀心理訓練在體育與運動情境的研究與應用 《中華體育季刊》30 卷 1 期，31 - 38 頁。

References for Students

Magill, R.A., & Anderson, D. (2017). *Motor learning and control: Concepts and application* (11th ed.). Boston: McGraw-Hill.

Weinberg, R.S., & Gould, D. (2014). *Foundations of sport and exercise psychology* (6th ed.). Champaign, IL: Human Kinetics.

姒剛彥 (2007)〈第 19 屆亞洲保齡球錦標賽運動心理學家工作手記(上)〉,《中國運動醫學雜誌》，26(3)，360-363。

姒剛彥 (2007)〈第 19 屆亞洲保齡球錦標賽運動心理學家工作手記(下)〉,《中國運動醫學雜誌》，26(4)，488-492。

孫青、張力為 (2006) 〈別對我期望太高：運動領域中的自我設限〉,《心理科學進展》，14(6)，956-960。

黃日明 (2001)《相約在頒獎台：香港體壇的女兒》。香港：體院匯友社。

鍾伯光、姒剛彥、李慶珠 (2006)〈影響香港運動員在重大國際比賽中運動表現的因素研究〉,《體育科學》，26(12)，42-47。

鍾佳宜 (譯) (1998)《生活中的運動家：心靈運動：徹底激發你的潛能》。台北市：海鴿文化出版 (Millman, D., 1998)。

張育愷等 (譯) (2016)。《健身運動心理學論與實務的整合》。臺北市：禾楓。(Lox, C. L., Martin Ginis, K. A., & Petruzzello, S. J., 2014)

張育愷等 (譯) (2015)。《教練的競技運動心理學》。臺北市：易利圖書。(Burton, D., & Raedeke, T., 2008)

盧綽蘅 (2019) 《運動心理學：建立自信 盡展所長》香港：花千樹出版有限公司。

Related Websites

1. American Psychological Association
   https://www.apa.org/
   - APA Division 47 Exercise and Sport psychology,
     https://www.apa.org/about/division/div47
   - "Controlling Anger - Before It Controls You"
     https://www.apa.org/topics/anger/control
2. Association for Applied Sport Psychology (AASP)
   https://appliedsportpsych.org/
3. HKPE.NET (in Chinese only)
   http://www.hkpe.net/hkdsepe/
   - Sport Psychology (in Chinese only)
     http://www.hkpe.net/hkdsepe/sports_psychology.htm
   - Psychological Aspects of Running (in Chinese only)
     http://www.tswong.net/hkpe/running/psychological_aspects.htm
4. Hong Kong Society of Sport and Exercise Psychology
   http://www.hkssep.org
5. Hong Kong Sports Institute (HKSI)
   https://www.hksi.org.hk/
   - Education Pamphlets－Sport Psychology Education Series
     https://www.hksi.org.hk/news-publications/scientific-publications/education-pamphlets/sport-psychology-education-series/healthy-mind-healthy-body-eating-disorders
6. International Society of Sport Psychology (ISSP)
   https://www.issponline.org/
7. The British Association of Sport and Exercise Sciences (BASES)
   https://www.bases.org.uk/
   - Psychology
     https://www.bases.org.uk/spage-divisions-psychology.html