

CHAPTER 12 - Guidance and feedback

Exam style questions - text book page 146

1) a) Why is visual guidance particularly suitable for learning a new skill? 2 marks

Answer:

- Provides learner with a **mental image** of the skill.
- In terms of sequencing or timing of the movement.
- Draws attention to key points such as cues.

b) Why can verbal guidance be of limited use on its own? 2 marks

Answer:

2 marks for 2 of:

- Can **overload** beginners with information.
- Learner may **lose concentration**.
- **Language** may be **too complex** for beginners.
- Not as useful when used by itself.
- Therefore should be combined with other forms of guidance.

c) What are the benefits of verbal guidance? 3 marks

Answer:

3 marks for 3 of:

- Tactics can be explained.
- Gives technical information, key points and highlights cues.
- When used with visual can form mental image.
- More effective for the autonomous stage of learning.

d) When are manual and mechanical guidance best used? 4 marks

Answer:

4 marks for 4 of:

- **Manual guidance** uses physical support and is best used with competent performers during the autonomous stage of learning.
- As it gives kinaesthetic awareness and confidence to the learner.
- **Mechanical guidance** involves the use of equipment to help support the learner and shape the skill.
- And is best used during the cognitive stage of learning.
- As it helps the performer learn a movement whilst building confidence and getting a sense of how it should feel.

2) Discuss briefly how technology can benefit guidance methods 6 marks

Answer:

Note there are many possible alternative answers to this question.

6 marks for 6 of:

- The most appropriate technologies benefit both visual and verbal guidance.
- Verbal guidance is more effective during the autonomous stage of learning.
- **Digital players**, such as MP3 players, can record audio files that performers can listen to and use during visualisation training to guide them through technical information required for their performance.
- Thus reinforcing technique by creating a mental picture for the learner.
- Other digital players, such as **iPOds**, **mobile phone apps**, can produce both video displays and audio commentaries of performances.
- **Video analysis** has the advantage of slow motion, split screens and freeze frame features to enhance demonstration analysis.
- Such technologies can be used as demonstrations for learners, particularly during the cognitive phase of learning.
- Other examples of visual guidance include **diagrams**, **pictures** and **models** often presented to the learners in digital format.

- 3) a) Other than visual guidance, what other main methods of guidance are there? Give a practical example for each. 6 marks

Answer:

- *Verbal* - for example, instructions to an athlete before a race.
- *Manual* - for example, supporting a gymnast doing a handspring.
- *Mechanical* - for example, a child using stabilisers on a bicycle.

- b) How would you optimise the use of visual guidance in teaching motor skills? What are the drawbacks of this method? 4 marks

Answer:

Visual guidance:

2 marks for 2 of:

- *The coach or teacher would use an accurate demonstration.*
- *Cueing the performer to important elements.*
- *Use immediately before performance.*
- *If visual guidance is used as feedback, it must be used immediately after the performance.*
- *Make sure it is supplemented with verbal guidance.*
- *If models or videos are used, ensure relevance to the learner.*
- *Make sure the model presented is attainable.*

Drawbacks:

2 marks for 2 of:

- *Confusion if too much visual guidance is shown at a time.*
- *Model or demonstration may be inaccurate.*
- *If videos are used, these may be boring or demotivating.*
- *Model seen may be perceived as unattainable.*

- 4) a) Identify two different mechanical items which might assist movement skill learning. 2 marks

Answer:

Any two examples of mechanical aids to learning:

- *Support belt in trampolining.*
- *Stabilisers on bicycle.*
- *Arm bands in swimming.*

- b) Give reasons for the use of these mechanical items to help a learner come to grips with a motor skill. 4 marks

Answer:

Give reasons:

- *Gives confidence to learner.*
- *Provides safety.*
- *Enables success.*
- *Builds up subroutines and enables part-learning.*
- *Gives an idea of the skill with similar kinaesthesia.*

5) a) Define the term feedback, and briefly describe three functions of feedback.

4 marks

Answer:

- *Feedback* is any kind of information received by a learner as a result of a particular response or act.
- This information would be available during and after the movement had been completed.
- And would be brought into the system both during the course of the movement and after the movement had been completed.

Functions of feedback are:

- *Motivational* - success or failure, clear goals, inspires the performer to continue striving for perfection.
- *Reinforcing* - increases the chance of the performer repeating the performance.
- *Informational* - the outcome of the performance, is it correct or incorrect?

b) How would you make feedback effective when teaching a motor skill?

4 marks

Answer:

Effective feedback:

- Feedback must be accurate and well-informed.
- Knowledge of results is important.
- Be specific and selective with information (not too much information at a time).
- Make the feedback interesting to hold attention and aid retention.
- Information should be understood by the performer.
- Feedback should be given straight after the performance.
- Encourage intrinsic feedback or the feel of the movement (kinaesthesia).

6) Distinguish between intrinsic and extrinsic feedback.

2 marks

Answer:

- *Intrinsic* feedback is information received by the athlete as a direct result of producing a movement through the kinaesthetic senses such as feelings from muscles, joints and balance.
- *Extrinsic* feedback is from an external source to the performer that can affect performance.
- And either motivate or demotivate the performer depending on the quality of the feedback.
- It consists of *knowledge of performance* and *knowledge of results*.

7) Using figure 12.6 on page 144, what feedback might a coach give to the player (in the black kit) who has just played a forehand drive and is attempting to read his opponent's next shot.

3 marks

Answer:

- Look at current positioning of opponent in terms of stance, racket head position.
- Anticipate changes in his position, speed and posture.
- Which may give clues to shot selection.

8) Explain how feedback differs through the associative and autonomous stages of learning as a performer makes progress.

4 marks

Answer:

4 marks from 4 of:

- Feedback involves using information that is available to the performer during and after the execution of a skill.
- During the *associative stage of learning*, the learner has an overall picture of what is required of the skill, but still makes mistakes.
- *Intrinsic feedback* involves the learner associating the 'feel' of the activity, via kinaesthesia, with the end result.
- And combined with *extrinsic feedback* through visual and auditory systems (from an external sources such a coach), by providing knowledge of performance and results, play a significant role as the performer makes progress.
- During the *autonomous phase of learning*, movements are well integrated as athlete is able to *perform without conscious effort*.
- The skilled athlete provides their own intrinsic feedback as he or she is able to judge and assess performances and make corrections by him or herself.
- The coach works in partnership with the athlete in the refining of technique.

9) a) How is closed loop theory used to make a movement more skilful?

3 marks

Answer:

Closed loop control contributes via:

- *Proprioception or intrinsic feedback gives information about errors or correct movements.*
- *This information can then be used to correct errors or reinforce correct movement.*
- *Information is sent via the command mechanism or effector mechanism for muscular control.*
- *There has to be little conscious attention during closed loop control.*

b) Explain the contribution of the use of subroutines to open loop control and the autonomous phase of learning.

6 marks

Answer:

Explanation of use of subroutines to open loop control:

- *Well-learned subroutines linked together to produce a finely balanced skill.*
- *Contribute to the autonomous phase of learning due to the fact that the skill is well-learned.*
- *And little intervention is required from a coach.*
- *Little feedback is required (except for final knowledge of results or performance) because the skill is performed automatically.*
- *Hence open loop control, and the motor command to perform the skill produces the movement with very little feedback during the movement itself.*

- *The memory trace selects which motor unit to use and starts a movement.*
- *The perceptual trace regulates the body motion via kinaesthetic feedback.*
- *It is used to compare the correct response and actual response.*
- *Kinaesthetic feedback is used to correct movement patterns and adjust to changing needs to make a movement more skilful.*

10) Explain how feedback in a sports skill learning situation helps the sportsperson improve performance.

4 marks

Answer:

- *Helps with motivation, and increases self-confidence.*
- *Helps with detecting and correcting errors.*
- *Reinforces correct actions or skills, so that the performer knows what to do.*
- *Strengthens the S-R bond in the learning situation, so that the correct movement is perceived by the sportsperson to be the correct thing to do.*
- *Reduces or prevents bad habits.*
- *Helps reduce likelihood of inhibition (drive reduction theory).*

- 11) Discuss the idea that improvement in skill performance is dependent upon the nature and frequency of feedback provided by the coach. 12 marks

Answer:

- Feedback describes the way in which information is received by the performer about a performance, and is known as **knowledge of performance**.
- There are several different types of feedback that can be used to improve performance: **intrinsic, extrinsic** (or augmented feedback), **positive, negative, concurrent, terminal**, knowledge of performance and **knowledge of results**.
- Intrinsic or internal feedback, available as a natural consequence of performing an action, is internally received via proprioceptors (**kinaesthetic** information).
- It is what the performer subjectively **feels** about their performance.
- For example: What are the performer's thoughts and feelings (knowledge of performance) about their performance or training?
- **Extrinsic** or external feedback is received from external sources through vision and sound.
- It needs to be **immediate, precise** and **accurate**.
- **Knowledge of results** provides the performer about the **outcome** of the performance.
- If used correctly, it can **motivate** the performer.
- It can be **positive**, for example a coach gives praise to a tennis player when he or she serves a perfect serve.
- The coach would clearly indicate what was good about the performance.
- **Positive feedback** focuses on what the performer did well and suggests how further improvements could be made.
- Positive feedback will strength the stimulus-response bond (S-R) bond and will therefore reinforce learning.
- Positive feedback is particularly beneficial for learners at the cognitive and associative stages of learning.
- And so should be used frequently to reinforce learning.
- Once the performer has refined the skill i.e. autonomous stage of learning, less feedback is needed.
- However, some elite athletes become dependent on feedback.
- In most sports coaches are able to give feedback between rounds. In some sporting events, such as in Grand Slam tennis tournaments coaches are not allowed to give concurrent feedback to their players.
- And so when feedback is withdrawn or cannot be given their performance may deteriorate.
- Giving **negative feedback** to someone is not always useful as it fails to explain how improvements can take place.
- However, it can be beneficial to elite performers when analysing faults, in addition to providing a **motivating influence** to improve performance.
- Negative feedback should be used sparingly as it could suppress performance.
- For example, a coach who repeatedly feeds back information about faults, and gives very little help about how to correct them.
- **Concurrent feedback** is received during the performance and it is particularly beneficial for continuous skill as it allows quick corrections to occur.
- For example, a coach tells a runner when they are halfway through a marathon that they are 10 minutes ahead of their personal best performance.
- **Terminal feedback** occurs after the performance either immediately or a while after.
- Immediate terminal feedback allows the situation to be addresses while it is fresh in the mind of the performer. For example, a coach evaluates the performance of a netball team at the end of the game.
- **Delayed feedback** gives the performer a chance to assess their performance.
- Therefore it is important that the coach gives good quality, relevant feedback to ensure that learning is positive.
- **Feedback**, about **movement errors**, is one of the most important aspects of the learning environment.
- Without it performers and elite athletes would have little understanding of how to correct their errors.
- Feedback is not the only factor that accounts for improvements in performance, which is also dependent on other variables.
- The most important learning variable is practice itself.
- Both the amount and quality of practice are important for effective learning.
- In summary, a combination of **feedback** and **practice** account for most of the improvements in skill performances.

- 12) **A Level.** Feedback is used by coaches to develop sports skills. Discuss how different types of feedback benefit from the use of technology. 15 marks

Answer:

Note: Many modern technologies are used by coaches to develop sports skills. You must select appropriate types of feedback that benefit from at least three different supporting technologies.

- **Feedback** describes the way in which information is received by the performer about a performance.
- Sports technology can be used to perfect technique through the use of analysis.
- By providing extrinsic or external feedback through vision and sound.

- The **heart rate monitor** is fairly old technology. However today's monitors are very sophisticated with GPS tracking technology and associated mobile apps that can calculate training intensities, calorie burn, distance run, splits and data storage.
- The heart rate monitor can provide concurrent, terminal and delayed feedback.
- For example, a coach sets a prescribed running pace for a marathon race. During the race, the athlete is guided by a series of beeps that informs the athlete of the prescribed pace against actual pace, thus providing **concurrent feedback**.
- At the end of the race the coach and athlete can review split times and critical threshold points in the race.
- **Terminal feedback**, from GPS heart rate monitors such as the Garmin range, facilitates knowledge of results that can be used to develop future race tactics.
- And later on this data can be downloaded to data storage facilities to compare results such as plotting performance graphs over time.
- This **delayed feedback** gives the coach a chance to assess their athlete's performance and plan future training programmes.

- Other **GPS systems**, for example the GPSPORTS system, can track the movements of players on a pitch, working out players' average speeds, total distance travelled and positional locations in relation to opposition players.
- Many top soccer and rugby professional teams use GPS systems. The coach can plan training programmes, match tactics and strategies using this information.

- **Video analysis** and software provides both visual and auditory cues.
- Video analysis can be used to provide information in the form of **extrinsic feedback** to an athlete during continuous aerobic performance and between rounds in field events. Athletes are able to access their coaches during field events and receive appropriate feedback in preparation for their next throw or jump.

- **Continuous feedback**, derived from video analysis, could make all the difference between winning and losing an event, when the coach provides the athlete with a simple technical skill prior to the next jump or throw.
- **Digital** software, such as **Dartfish**, highlight technical aspects of performance using a variety of tools such as split screens, and comparison of performance against technical role models.
- Over time the coach can assess if technical improvements have been made.

- **Notational analysis** systems, also known as **tally chart feedback**, provide statistical or graphical format that highlight categories of strengths and weaknesses of a performance.
- This in-depth analysis provides quantitative data, such as the number of unforced errors and total points won in a tennis match.
- This type of match feedback provides significant athlete and coach feedback in terms of technical, mental and physical aspects of the game.

- **Laser sensor** equipment, such as electronic timing gates, is wirelessly connected to a mobile unit (tablet PC, Android phone) and all data is directly transferred to it.
- Since the runner is the only person, who can trigger the timer on electronic timing gates and stop it, there is practically no room for error.
- Data can be used between sprints and at the end of a training session.
- Once more providing information (knowledge of results) to both the athlete and coach in the form of continuous and terminal feedback.
- Digital software systems are very expensive and so may be limited to athletes and coaches who are financially well supported.
- Negative feedback from the coach (derived from such technologies), should be used sparingly as it could suppress the athlete's performance.
- **Positive feedback** from the coach (derived from such technologies), will reinforce learning or performance of skill.