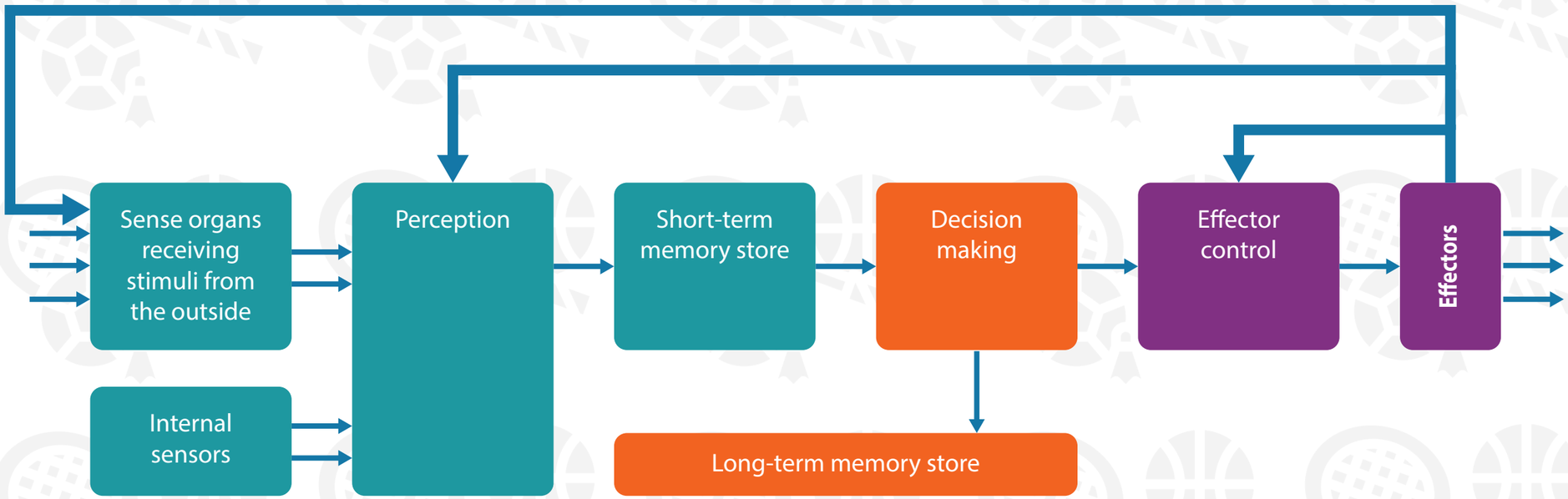
Information processing

Welford's model subdivides input, decision making and output, and has two feedback mechanisms: internal and external.



How the coach can improve the information processing model.

Sensory input/selective attention

- Change visual display e.g. use bigger ball
- Reduce the cues so learner not overloaded
- Ensure basic skills are well learned to free up spare attention capacity
- Reduce anxiety.

Memory

- Providing lots of practice
- Use phrases and sayings that will help learners remember key points e.g. ‘clean palm, dirty neck’ in shot putt
- Make sessions exciting and more memorable
- Do not move on too quickly.

Decision making

Varying practice so that learners experience a range of different situations, building up their long-term memory to enhance decision-making.

Reaction time

Giving learners information about important cues to watch for. Practice!

Feedback

Use informational/technical feedback wisely, so that performer does not become too dependent on it.

Information processing theory explains the brains processes for decision making and learning.

The universal theory is sensory input, perception and selective attention, decision making including memory (short term sensory store, short and long term memory) and effector/output.

There are two main theories (Welford and Whiting’s models) of information processing. Both models are slightly different.

Information processing

Feedback

Understand the types of feedback including: intrinsic, extrinsic, knowledge of results, knowledge of performance.

The benefits of feedback to the performer: motivates, reinforces and informs.

Characteristics of effective feedback

Positive: constructive and informative. This feedback should motivate and offer instructions on how to improve. The feedback will be qualitative and helps with the development of performance. There is also a need to acknowledge effort as well as performance.

Specific and consistent: offering clear and transparent information that has integrity. This will challenge the performer to improve and they will have clear direction on how to do so.

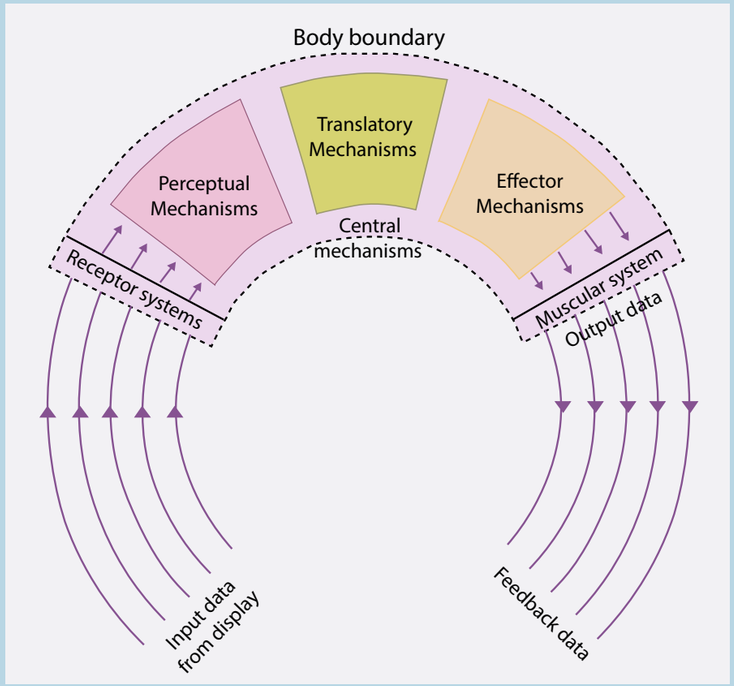
Immediate: the timing of feedback is vital to progress if the feedback is going to have an impact on skill or behaviour.

Frequent and chunked: offering the performer small pieces of information that they can act upon. The quantity of information does not overload the performer; however it is important that the language that is used is appropriate to the performer and their stage of learning.

Accurate: offering feedback that is correct and sincere. This will require the building of a relationship where the coach can be honest with the performer. This is sometimes helped with quantitative data.

Whiting, however, tends to use different terminology and sees the process more as a cycle. He refers to the process having four stages:

- Receptor systems – the sensory organs
- Perceptual mechanisms – filtering information
- Translatory mechanisms – where decision making takes place
- Effector mechanisms – output messages sent to the limbs via the nervous system.



PERCEPTION – the player interprets the information around them, e.g. the opposition. The player **DETECTS** who's in the space around him/her, and **COMPARES** the information to previous experiences. The brain then **RECOGNISES** a similar stimulus. The information is then perceived.