An athlete passes through three acknowledged stages of skill development to master a motor skill. Each stage has distinct characteristics and athletes require physical and mental practice at each learning stage to progress.

### Cognitive

A novice athlete makes many errors and is inconsistent in performance. The athlete will be unfamiliar with the equipment and how to use it. They will have a rough mental picture of the movement patterns required but will need to be shown the correct technique for the motor skill including the sub-routines. Correct technique should be demonstrated by a competent performer. The athlete needs time to learn the appropriate timing and sequencing of subroutines. They will make errors without being able to isolate the specific problem(s). Instructions and feedback must be encouraging, succinct and simple, to avoid information overload. Improvement is usually rapid with the athlete trying to understand the skill. Once an understanding is developed, the athlete will need hours of practice to refine the skill for effective application.

### Associative

An athlete understands the mechanics of the skill and can perform the skill with few minor errors. Emphasis is on refining the skill rather than establishing new movement sequences. The athlete can make minor adjustments to their movement in response to feedback. Demonstrations should still be used to help modify the skill and feedback can become more specific. The skill should be practised in modified and simulated game settings. The athlete can modify the skill to meet different match requirements. Improvement is gradual. Practising correct movement patterns is essential to assist athletes to move to the autonomous stage.

### Autonomous stage

An athlete consistently achieves the desired result without consciously thinking about the separate sub-routines of the skill. Movement responses are automatic and attention is focused on improving specific components of the actions, as well as the application of skill at appropriate times in game situations and tactics. Practice in the competitive situation is crucial. The individual athlete can identify problems and adjust appropriately.

Athletes who reach this stage usually remain in it, although they never stop learning. The autonomic performer must continuously refine his or her motor program to match conditions, new tactics and styles of play.

Athletes may return to the associative stage to relearn a particular skill in their technique.

An athlete at the autonomous stage:

* is fluent and controlled
* makes appropriate decisions rapidly and accurately
* performs skills efficiently and seemingly effortlessly
* copes with the demands of both speed and accuracy in decision making
* performs movements consistently and is adaptable
* is able to focus on ‘reading the game’ and adjusting to the position of team mates and opponents.

Adapted fromSmyth et al., *Live It Up: Books 1 and 2 (2nd edn)*, Jacaranda, Australia, 1999

### Further references

NSW HSC Online, *Factors affecting performance: How does the acquisition of skill affect performance?* <http://hsc.csu.edu.au/pdhpe/core2/skill/3037/4_5_4skillacqn.htm>

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