

Chapter 14

The Diamond Model of Skill Acquisition (DMSA)

Derek Tate



"People are happy when they have a purpose and are actively involved in trying to reach a challenging goal".

Jackson & Csikszentmihalyi, (1999)

Learning objectives – at the end of this chapter you will be able to do the following:

- Summarise the four stages of the Diamond Model of Skill Acquisition.
- Understand the student experience at each stage of the model.
- Understand the role of the teacher in helping students acquire skill.

List of topics:

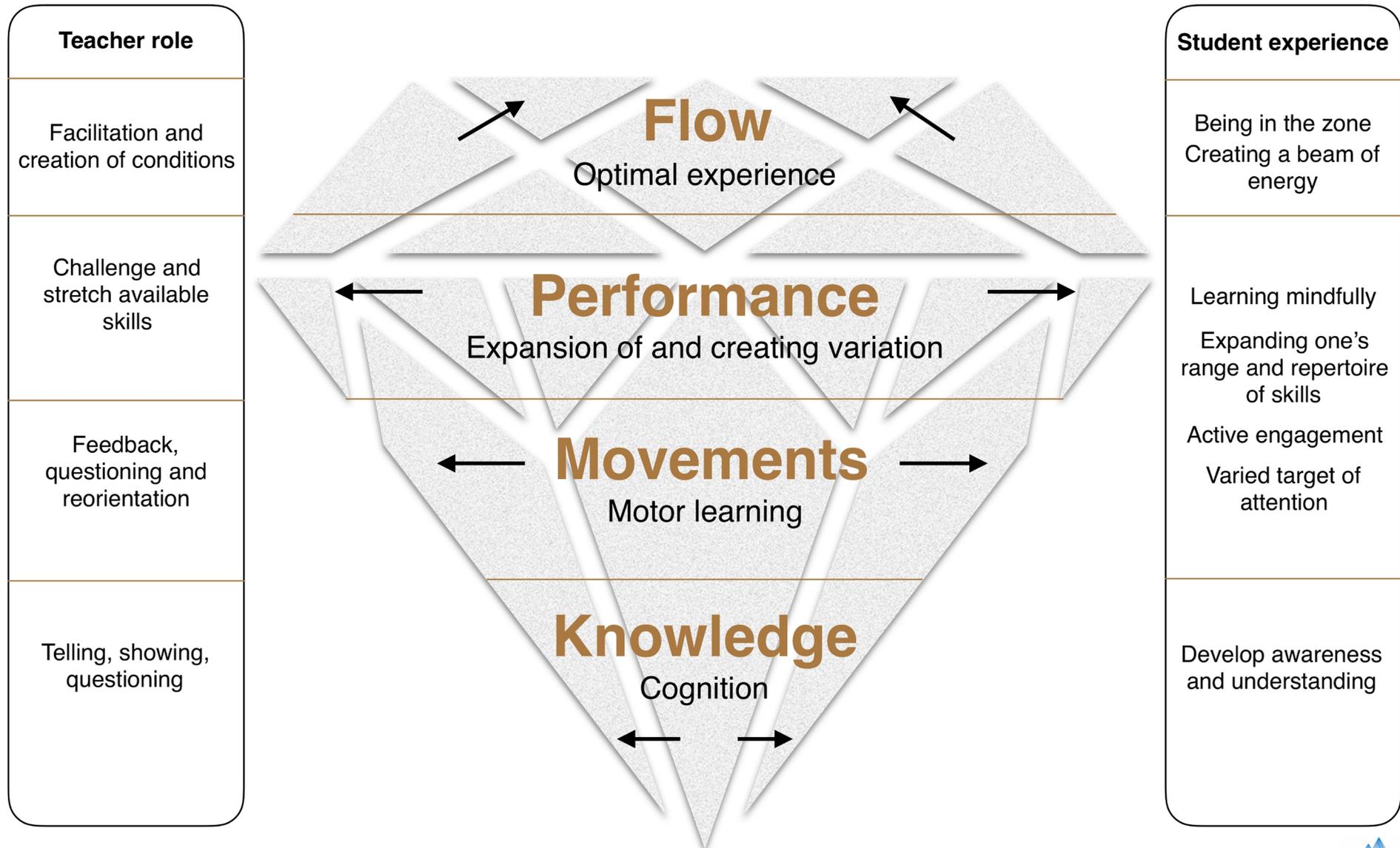
- Developing your skill with flow and mindfulness.
- The Diamond Model of Skill Acquisition.
- The nine dimensions of the flow mindset.

Developing your skill with flow and mindfulness

Learning new skills is one of life's greatest joys. This chapter presents a new integrated model of skill acquisition that draws upon the work of Ellen Langer (1998, 2000) and her approach to mindfulness and mindful learning and also the work of Mihaly Csikszentmihalyi (1975, 1990, 1997) and his construct of flow or optimal experience. These ideas are combined with Fitts and Posner's (1967) original stages of skill acquisition to provide an innovative approach to acquiring skill that will lead to enhanced learning and enjoyment. The **Diamond Model of Skill Acquisition** (DMSA; see Figure 1 on the next page) is noteworthy because it places importance on fostering the student's well-being alongside the acquisition of skill.



Diamond Model of Skill Acquisition



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The significance of the diamond shape is an important step in the development of this conceptual model, which emphasises that as the learner moves through the first three stages of skill acquisition there is an increase in mental and physical abilities in relation to knowledge, movements and performance. During the third stage performance is honed and if conditions are optimal then the performer may enter the flow state and hence narrow their focus towards the desired goal. By using a mindful learning approach throughout a retraining of the learner's attention takes place allowing for better focus on the task at hand.

REFLECTION

How does this model compare to your previous understanding of skill acquisition?

An explanation of each stage

Knowledge

This is the cognitive learning phase of skill acquisition. The brain begins to acquire knowledge and the breadth and depth of that understanding gradually expands. The mechanisms for learning here are through reading, seeing and hearing. It is vital, therefore, that the learner sees visual demonstrations (showing) and receives clear explanations (telling) in order to build up a mental picture and assist with early attempts. In effect, the brain is being warmed up to new activity in preparation for learning new movement patterns.

Movements

During the second stage, the learner develops a range and repertoire of movement patterns that gradually become more complex, allowing the required skills to be executed both efficiently and effectively. This is where motor learning takes place requiring exploration, repetition and practice of the movements needed to perform (see the article Purposeful Practice; Tate, 2017b). In the original Fitts and Posner model this is called the associative phase however, the mindful learning approach suggests that the learner should keep their mind actively involved in the present noticing new and novel distinctions as they practice. This will promote greater adaptability of the skill, which, for sports that take place in an open environment, such as skiing and snowboarding, is an essential quality for coping with the ever-changing conditions.

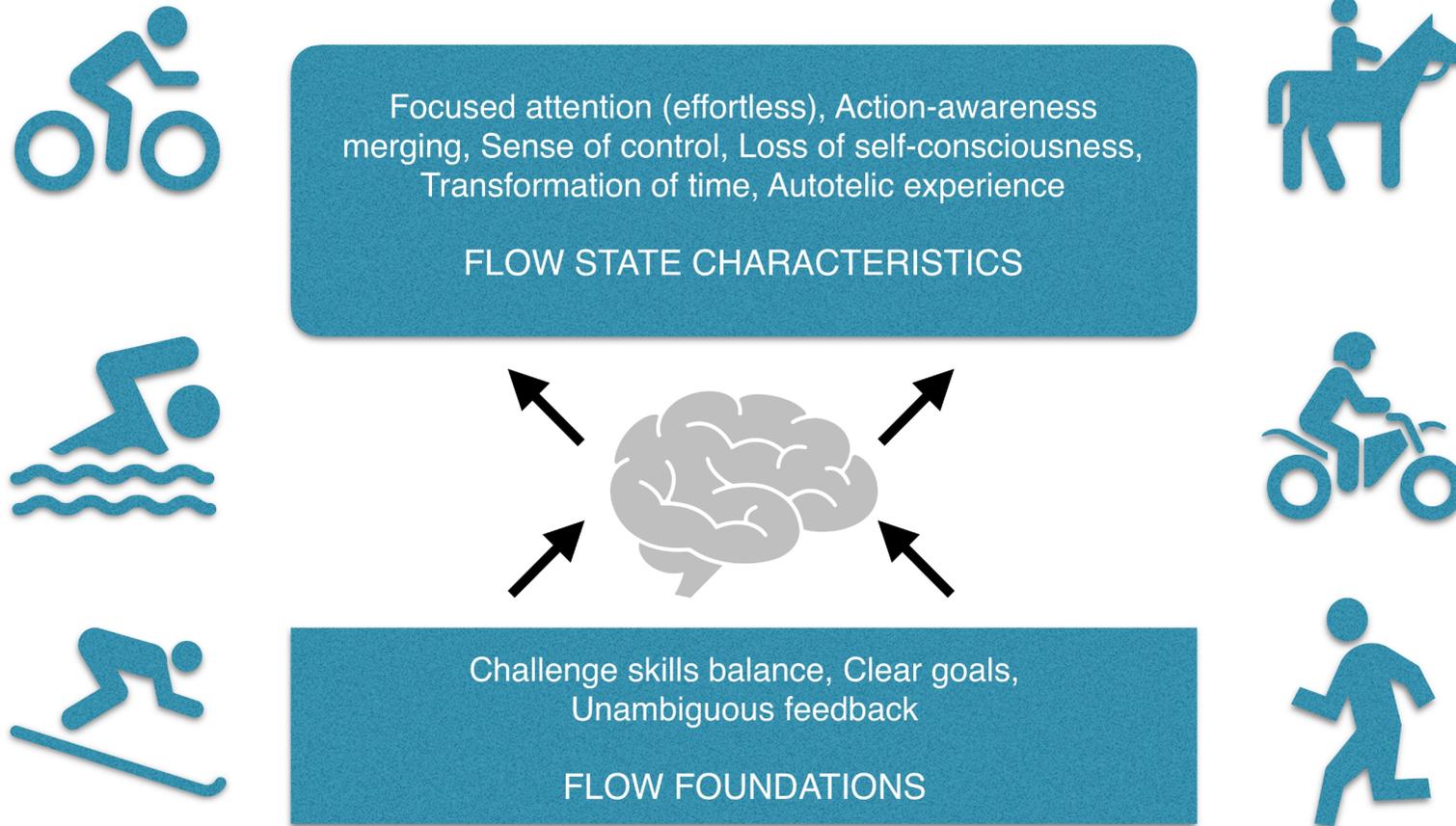
Performance

This is the stage where the skills become autonomous and thinking becomes more effortless. The brain, at this stage, could be said to be quieter or less busy than the previous stage. The training focus now moves to creating variation in the execution of the skills. As in the previous stage, from a mindful learning perspective, it is important for the learner to remain present moment focused, noticing new and novel distinctions as they perform. A more external focus is beneficial in terms of the activities chosen by the teacher and this is the stage where the learner can be challenged in order to make the performance more robust and set up the likelihood of moving into the next phase of achieving optimal experience (see the article Challenge Yourself; Tate, 2017c).

Flow

Optimal experience is the more accurate terminology for the 'mental state' that performers enter when some or all of its nine dimensions are met. Figure 2 (on the next page) illustrates the nine dimensions of the flow mindset and how they are divided into flow foundations and flow state characteristics (see the Flowing with Mindfulness website for more info on flow).

The nine dimensions of the Flow mindset



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Based on the work of Mihaly Csikszentmihalyi

Flow has become a more popular, mainstream, name for this experience. One of the most important dimensions of flow is the ability, of the learner, to focus attention effortlessly so that there is full engagement on the task or performance in hand (see the article Focus Your Attention; Tate, 2017a). Csikszentmihalyi describes attention as being a kind of 'psychic energy' that helps bring order to consciousness.

The concept of the DMSA is that as the learner enters the flow state their attention flows in the direction of the intended goal narrowing towards that target. One question that is often asked is; does flow = peak performance? The answer is; maybe and in many cases yes. However, optimal experience is a pleasurable experience, both during and after the activity, and leads to greater enjoyment of the overall learning process thus it is a desirable state in its own right in that it can lead to greater well being of the individual concerned.

The student experience

The **student experience** helps clarify what should actually be happening, for the learner, at each stage of the model. During the first stage; **knowledge**, the learner is engaged in developing awareness and beginning to execute and understand how a skill is to be performed. When learning a new skill this means starting from zero or unconscious incompetence. In the second stage; **movements**, the learner's brain is busy. Engagement should be active and full while remaining present moment focused. Attention should be focused in such a way that it is not 'fixed' on the stimulus but rather a varied target of attention so that the learner notices every detail. This is what Langer describes as mindful learning. In stage three; **performance**, the learner should experience the opportunity to expand their repertoire of skills while retaining the mindful learning approach of the previous stage. During the final stage; **flow**, the learner may experience a number of things but one of the most common expressions relating to this stage is "being in the zone". Attention is so focused, yet effortless, it is like a beam of energy.

REFLECTION

Can you recall a time when your learners have become distracted or perhaps otherwise attracted? Have you been able to help them refocus their attention on the task in hand?

The role of the teacher

Understanding the role of the teacher is crucial for helping students to progress through this model when learning and acquiring skill. During the **knowledge** stage the learner needs to gather and process information as they attempt the task, hence the teacher needs to use a good mix of showing, telling and questioning. The latter is vital for checking understanding, while depending on the student's learning style, the mix of explanation and demonstration may need to vary. The **movement** stage is all about doing, from the learner's perspective, but the teacher needs to ensure that the learner receives sufficient feedback through a variety of sources aided by the use of different teaching styles (Mosston & Ashworth, 2002). Questioning is again an important part of the process and an integral part of successfully using teaching styles such as reciprocal, self check and the discovery styles. If the practice goes 'off course' at this point then the teacher needs to re-orientate the learner to the desired movement pattern. The teacher's main task, during the **performance** stage, is to provide sufficient challenge for the learner so as to really consolidate their learning while also getting them to use their available skills. This is referred to as the challenge/skills balance within the flow construct and leads nicely to the final stage. It is not possible to teach someone to experience **flow**, or for a learner to experience it at will, but if the right conditions are created, or facilitated, by the teacher, then the chances of the learner experiencing it go up considerably.

REFLECTION

When you are teaching do you manage to find the right mix of telling (explanation), showing (demonstrating) and questioning? Are you conscious of this mix changing to match the learner's stage of skill acquisition?

Summary – key points from this chapter

- Learning new skills is one of life's greatest joys.
- The Diamond Model of Skill Acquisition combines the development of skill with the fostering of the individual's well being and enjoyment.
- The model's 'Diamond' shape is significant as it relates to the expansion of mental and physical abilities followed by the honing of performance and the narrowing of focus towards the desired goal.
- Mindful learning is an active process, while remaining in the present moment, with attention focused in such a way that it is not 'fixed' on the stimulus but rather a varied target of attention so that the learner notices every detail.
- The 'Flow mindset' has nine dimensions three of which are flow foundations and six of which are flow characteristics.
- There is no guarantee that the learner will experience flow but if the right conditions are created, or facilitated, by the teacher, then the chances of the learner experiencing it go up considerably.

Suggested reading and resources

While it is useful to understand where the current thinking on skill acquisition has emerged from the easiest to read material would be the articles by Derek Tate listed in the references. These have been written in the context of snowsports. In addition Ellen Langer's book *Mindful Learning* and Mihaly Csikszentmihalyi's *Finding Flow* have a wealth of information on some of the theory that has inspired this model.

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