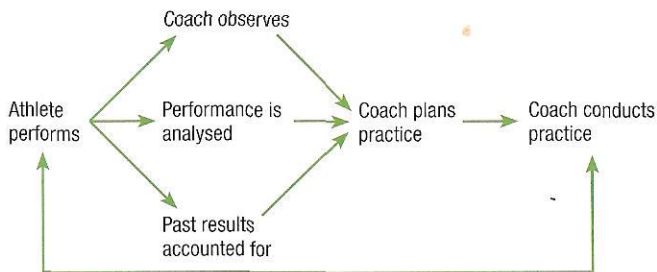


Analysing Performance Analysis

A combination of established methods and new technology will help coaches effectively complete the biggest and most important part of their job – analysing player performance. By **Dr Sarah Morante**

Importance of Performance Analysis

As coaches, the bulk of our work centres on performance analysis. We are constantly watching our players in training to identify errors and determine why they occur. We may also watch our players' matches to see how these skills transfer from training into competition and how they strategically approach game play. We then have to translate our analyses into technical and tactical training strategies for our players to use and improve their performance. This ongoing process of practice and performance is illustrated in the following diagram:



If the coach's observations and analysis are incorrect, so too will be the subsequent training program. Therefore, it is essential that the process of performance analysis be as objective and comprehensive as possible so that training and competitive performance can be maximized.

Types of Performance Analysis

1. Biomechanics

Biomechanics involves detailed analysis of individual sports techniques based on mechanics and anatomy to identify contraindicated techniques. Coaches spend a large proportion of their time involved in biomechanical analysis of strokes, continually working with players to develop a technique that is effective yet is unlikely to result in injury. For example, we teach and monitor the use of appropriate grips, swings and footwork, in addition to ensuring the use of correct equipment and training methods.

2. Notational analysis

Notational analysis, on the other hand, involves analysis of gross movements and movement patterns. It is predominantly used to examine outcomes, and the application of strategy and tactics. Many coaches watch their players compete and chart features of interest, such as the total number of winners and

errors, and how they occurred. We even subconsciously use this information following each set of a professional tennis match (such as first serve percentage, number of aces and double faults) to make conclusions about performance. Notational analysis can also provide information on the physiological and psychological demands of competition, and how a player responds to these stresses. For example, do errors occur at the end of long points when the athlete is fatigued or do they occur when trying to close out each set?

Therefore, we are doing a reasonably good job in both areas of performance analysis. However, most coaches subjectively measure both biomechanical and notational analyses based on their observations and opinions, which has relatively low accuracy and reliability.

Limitations of Traditional Performance Analysis

Coaches are human and therefore, traditional performance analysis using observation has a number of inherent limitations. Traditionally, coaching begins with observations of performance. However, the speed and complexity of tennis skills makes it difficult for a coach to identify everything happening during the execution of a skill, and more so when analysing an entire tennis match. As the previous diagram shows, any failure to identify errors within a performance will result in a misdirected training program.

Our second human limitation relates to subjective interpretation of the performance; as it very difficult not to involve our own perceptions, opinions, biases and previous experiences. What we expect from an individual player, the level of our knowledge and experience and even our mood will influence how we interpret a performance. This can make our analysis of performance unreliable as each of these factors may change over time, thereby altering our feedback and training objectives.

The third limitation of traditional performance analysis relates to memory capacity. Many coaches completely rely on storing every piece of biomechanical and notational information in their head. However, it is impossible for coaches to remember all of the important factors within a training session or competition, especially since we coach numerous players and over a number of years. A study among soccer coaches investigating their ability to recall important features of a match revealed only 30% of the key factors for successful performance were identified and that they were wrong in 55% of the post-game assessment of what

