

In the vast spectrum of elite sport, everyone always just wants to get better. Sporting success is usually the result of gradual improvements over a period of time, with a coach or coaching staff more often than not providing guidance and information to the athlete and/or team in question. The coaching process is an ongoing cycle of performance and practice, where a coach evaluates, intervenes, and feeds back information to athletes with the aim of enhancing future performances. Within this coaching process, feedback is critical for performance to improve. Traditionally, the feedback process has been based on a coach's subjective observation which can be influenced by bias, emotion and previous experiences. A subjective observation process is known to be unreliable and inaccurate, and this lack of accurate recall ability can lead to "highlighting" where a coach's perception of performance becomes distorted by only those events they can remember. Ultimately this results in a lack of accuracy within both coaching feedback and decision making.

Because of this, objective measuring tools are necessary to enable and facilitate the feedback process by providing unbiased and comprehensive information.

The techniques used to measure sporting performances and provide coaches and/or athletes with this type of information are often referred to as performance analysis.

Performance analysis is driven by sport's absolute need to understand and improve tactics, technique and movement. Improving on past performances and achieving performance goals is most easily achieved through the delivery of objective feedback. This discipline focuses on enhancing interventions within the coaching process to elicit a performance gain and augment learning. To achieve repeated success, coaches and/or athletes must know and understand what they have done to make them successful or unsuccessful and make the right decisions at the right time. Coaches and athletes spend a great deal of time thinking about how they can improve, or trying to understand the elements which make up a good performance. Essentially, performance analysis provides a way for coaches and athletes to know what actually happened as opposed to what they may have perceived to have happened. Performance analysis focuses on performance in both training and competition to draw lessons for improvement. It is rooted in the analysis of human movement and makes extensive use of video analysis and video-based technology. There is a strong focus on data collection and processing and, because of this, requires careful information management for good feedback to coaches and/or athletes. The practical value of performance analysis is that well-chosen performance indicators highlight performances of an athlete and facilitate comparative analysis of teams and players. In addition, it helps to identify injurious techniques as well as assess physiological and psychological demands of sports. Quantitatively defining where a technique fails or excels has very practical uses for coaches, in particular, and also for sport scientists aiming to analyse performance at different levels of athlete development.

Performance analysts work closely alongside the coaches and athletes to provide the relevant key performance information that helps objectify the

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performance. In an ideal situation the different sources of information will all be analysed using objective observation systems, meaning that the coaches can focus their attention on what they perceive to be critical incidents in their players' and opponents' performances. This allows for more evidence based decisions, augments the experiences and knowledge that they have gained, and reduces the speculation to enhance their ability to make the right decisions at the right time.

The goal is then to improve the performance of these players by planning practices based on these analyses. Objectivity can be obtained through the use of simple video, more complex biomechanical systems for fine analyses, or performance analysis software. The introduction of computerised notation systems has to some extent solved the problem of data processing. Used in real-time analysis or with video recordings in post-event analysis, they enable immediate easy data access, and the presentation of data in graphical and other pictorial forms which are more easily understood by coaches and athletes.

Benefits for Coaches

- Assists in understanding of athletes' strengths and weaknesses
- Enhances their own development and coaching practice
- Enables in-depth review of performances

Benefits for Athletes

- Improved technical and tactical knowledge
- Improved decision making
- Improved confidence

At TuksSport clubs, where the athletes' ultimate goal is to elevate to greatness and reach their full individual potential, the use of performance analysis is widespread and many of the coaches choose to use some format of video and/or notational analysis during the coaching process. In certain sports, such as swimming, an underwater or specialized camera can be positioned in ways which can record what the coach cannot see from their usual vantage point, thus providing them with additional insight into athletes' performances and techniques. In high speed sports such as golf or archery, actions occur at speeds too fast to see accurately with the naked eye. In these instances high speed cameras allow coaches to slow actions down to

a pace which is more accurately assessed. Team sports use in-depth notational and video analysis to statistically assess team tactics and the execution of planned strategies, as well as to identify strengths and weaknesses of both Tuks teams and their opposition.

Video technology applications can be used in a variety of ways to reduce injury risk as well as allow coaches to review, reflect and evaluate the development of many aspects of athletic preparation, and can be used to facilitate both qualitative and quantitative analysis. Tracking key performance factors through training and competition also allows for more objective identification of individual strengths and weaknesses, and forms a critical part of a performance analyst's job.

Looking for the 'marginal gains', identifying areas for improvement and tracking the success of interventions are all part and parcel of the performance analysis process.

IMPORTANT:

- "Not everything that is measurable should be measured"
- "Show me the results of performance analysis – not the performance analysis results"

