

▼ MODELLING THE COACHING PROCESS

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INTRODUCTION

This chapter focuses on the coach's behaviour: how it can be represented for the purposes of analysis and modelling, and how the available literature on the subject has described the coach's practice. The problems of model building are emphasised and the attempts of model builders to date are described and evaluated against a set of principles. Key amongst these is the extent to which the model builders have managed to relate the essential components of the coaching process to the coach's behaviour or practice. This quest is consonant with the objective of developing a conceptual framework around the coaching process. Often, a first stage in setting out a conceptual framework is to attempt to model practice. It will become obvious that this is not an easy task and is made more difficult by the 'processual' and multivariable nature of sports coaching.

The chapter begins with a clarification of what is meant by a model and identifies some of the difficulties in model construction. A number of models of sports coaching from the literature are then described and evaluated. The chapter closes with an examination of how models can be used for analysis, dealing with the vexed issue of application and reality constraints.

In summary, the following statements represent the current 'state of play':

- There are no all-embracing models of the coaching process that have received consensual agreement (Sherman *et al.* 1997; Abraham and Collins 1998; Potrac *et al.* 2000).

- Models of the coaching process do not play a large part in coach education and training.
- The 'coaching episode' is easier to model than the extended process and this has influenced the literature.
- The balance between the advantages of the generic model and the advantages of sport-specific models has not been resolved.
- There are very few models 'of' coaching that have been derived from rigorous research. Côte *et al.* (1995a) is an exception, and their model is discussed later in the chapter.
- The shortcomings in the literature identified earlier – absence of assumptions and lack of conceptual vocabulary – are evident in model building.

A number of models are reviewed in the latter part of the chapter (Franks *et al.* 1986; Fairs 1987; Côte *et al.* 1995a; Sherman *et al.* 1997). Each of these models has something useful to offer but each exemplifies the difficulties and shortcomings of model building in sports coaching. Ledington and Wootton (1986) confirmed the value of modelling but reinforced the difficulties involved. There are also many examples of 'part-models' – detailed accounts of sub-processes within the coaching process (for example, see Saury and Durand 1998 for an excellent example of this), but these do not amount to models.

It would be reasonable to ask why so much time is being devoted to models of coaching when it is clear from the outset that there are few good exemplars and the general tenor of the critiques of extant models will be critical. The capacity to devise appropriate models is one measure of the health of the conceptual development of the field. The intention of this chapter, therefore, is not simply to review existing attempts but to contribute to future developments as well.

WHAT IS MEANT BY A MODEL?

The outcomes of the sports coaching process are observable; that is, in athlete performances and athlete and coach behaviours. However, the coaching process itself is a construct, an abstraction. The purpose of this abstraction (the conceptual framework) is to provide a mechanism for the better understanding of the observable practice. A model is used to describe the components of the phenomenon (for example, the coaching process) and the relationship between the components.



Critical Concept

A model is a representation of the relational aspects of (usually) complex phenomena by using symbols or simplified descriptions that help to conceptualise the phenomenon itself.

Most individuals would be familiar with the notion of a replica model – that is, a smaller representation of a physical object – often capable of being 'taken to pieces' to demonstrate 'how it works'. On the other hand, models of the coaching process are symbolic models. These may appear to have a different function but really they are designed for much the same purpose. Models are valuable for

- description and scoping,
- explaining relationships between components,
- analysing practice by 'comparative' methods,
- providing templates for research and education, and
- predicting outcomes.

The potential for predicting outcomes by replacing default values in a model with real measures is an appealing prospect. The more that the relationships in a model can be specified and the components quantified, the more likely is prediction. However, first, it will not come as a surprise to learn that the great majority of sports coaching components cannot easily be quantified; and second, that the 'direction' of arrows or lines on a diagram have an apparent simplicity. However, they imply *causal, sequential and conditional* qualities, the accuracy of which may not yet be justified by research. Third, it may be possible to predict performance 'gains' in some individual (usually power-repetitive technique) sports, although the environmental effects are difficult to control and measure. It may also be possible to predict competition outcomes based on the differential human and material resources available. On the other hand, there have been few attempts to predict the outcome of a coaching process. This seems likely to be a result of the problem in controlling the enormous range of variables that influence performance. Subsequent evaluation will demonstrate that the models available have been more concerned to describe, rather than predict.

Modelling the sports coaching process should be part of any analysis of coaching behaviour and performance, and is central to evaluating effectiveness. A key feature of modelling is that it normally embraces a set of assumptions about performance, performance enhancement, social interactions and the coaching role. In addition, it may or may not be possible to incorporate notions of individual 'achievement strategies'. Despite this, or perhaps because of it, there are few (if any) good models of the sports coaching process and certainly none that have achieved consensual agreement or application. One of the objectives for this chapter is to develop a capacity to examine in a critical fashion any attempts to model the sports coaching process.

It has been recognised that models are representations of phenomena, the complexity of which is difficult to represent solely in words. A visual/spatial/relational representation allows an enhanced appreciation of the phenomenon and its qualities. It is important at this point to acknowledge that the term 'model' is used for a range of representations, ranging from simple diagrams to mathematical and complex modelling that allows some degree of prediction. There are also many limitations in building and displaying models. Amongst other problems, it is not easy to represent complex interactions, continuity of process, variation in scale and variations in practice. The most commonly used two-dimensional representations have inherent limitations.



Critical Concept

Models are generalised representations and are not causal at the level of the individual.

Type	Feature	Purposes
Diagram	Visual representation, reinforcement, modest relational qualities, usually simplistic, abstract concept.	[Understanding]
Model	Represents structure but indicates the relationship of the parts.	Understanding [Analysis]
Operational model	Represents a function or process; shows 'how it works'. Model 'of', usually derived from practice or research.	Understanding Analysis Prediction
Ideal model	Idealised representation; shows 'how it <i>should</i> be'. Model 'for', but should be able to say what the assumptions for the model are.	Understanding Analysis Prediction Planning
Planning model	Represents intentions; somewhere between operational model and ideal model. Real-life parameters built in.	Understanding Analysis Prediction Planning
Also		
Conceptual model	Helps to reflect/represent relationships between concepts and/or ideas. Useful for setting up research. Doesn't describe a real-life event or process.	Understanding Analysis

Figure 5.1 Common types of models

In order to scrutinise the literature more easily, it would be helpful to categorise the various types of models and the purposes for which they might most appropriately be used. Figure 5.1 describes the common types of models.

Care must therefore be taken with the casual use of the term 'model' when authors are intent merely to give a visual reinforcement of their ideas. This is evident in 'lists' or diagrams of sub-categories of phenomena, which have no explanatory powers and no sense of relationship between components.

Models 'of' the coaching process are derived from a description and analysis of coaching practice. Of course, the variety in practice would pose problems for generating an all-embracing model but this process has the advantage of a strong relationship between principles and practice. The model-'of' approach is very like the 'case-building' approach in the social sciences. On the other hand, the model 'for' the coaching process begins from a set of assumptions about sports coaching and builds a more idealistic or conceptual model for practice. The model builder may not expect the model to be found in practice in exactly its idealised form, but it provides a useful analytical tool for identifying the issues that are worthy of further attention.

Models are used for a variety of purposes. They may model intentions at the planning stage or be used to evaluate practice. They may also be used to help understand the implications of practice. For this reason it is important that the coach should be able to make judgements about the worthiness or appropriateness of a model. The following questions would be a valuable beginning in determining the usefulness of a coaching process model:

- Is it comprehensive? Does it attempt an all-embracing description of the process?
- Is it understandable? Are the key features easily discerned?
- Is it accurate/representative? Does it have an immediate sense of being valid?
- Does it describe all variations in practice? (This, of course, would be an ambitious task.)
- Does it build towards an outcome? Is it predictive (Operational and Planning Models)?
- Is it sufficiently detailed to be discriminating and, therefore, useful for analysis?
- Does it apply to all situations? Have contextual features been built into the model?
- Is it clear how the process described represents practical / concrete manifestations of sports coaching behaviour?
- How well is progression/continuity represented?
- Can it be quantified (mathematical models only)?
- Is the nature of the relationship between component parts (if A then B) established? Have the linkages been described in terms of direction, strength and causal condition?

Given this demanding list of questions, it would be reasonable to wonder whether there are any good/useful models. Clearly, this is not an easy business! At this stage in the evolution of sports coaching as a concept, theory and profession, there would appear to be no acceptable models with universal application. Part of the problem is the interrelatedness of the variables that influence performance and performance enhancement. At a simplistic level of analysis, the comparison of practice and performance to the model may allow the athlete and coach to decide where planning and implementation may have gone wrong. If a 'good' model is used for analysis, it may be possible to say, 'Therefore, this should have been the effect.' Although this sounds feasible, it is clearly not common practice at present and the major limiting factor is the absence of a suitable model.



Question Box

Models are generic representations. They are not 'used' by coaches but are available for analysis purposes. Nevertheless, this raises the question of whether the principles embedded in the model are (1) used in coach education, and (2) sufficiently understood by coaches to be used for evaluation purposes.