

PEDAGOGY FOR COACHES

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The best coaches are good teachers

Sir Clive Woodward –
England Rugby Union 2003 World Cup winning coach
(Cain 2004: 19)

Key sections:

- Introduction
- Learning theories
- Teaching styles
- Multiple intelligences
- Motivational climate
- Conclusion

INTRODUCTION

Traditionally, a divide has existed between perceptions of sports coaching and teaching, with coaching being viewed as training and the attainment of physical skills, whereas teaching has been seen to be about the total development of the individual (Jones 2006; Lee 1988). This divide is highlighted by such definitions of sport and physical education as: 'Sport covers a range of physical activities in which adults and young people may participate, PE, on the other hand, is a process of learning' (DES/WO 1991: 7); and 'PE is essentially an educational process, whereas the focus in sport is on the activity' (Capel 2000: 137). Pedagogy, defined as 'any conscious activity by one person designed to enhance learning in another' (Watkins and Mortimer 1999: 3) has, therefore, tended to lie outside the traditional concept of sports coaching (Jones 2006). Recent interview data from elite coaches, however, has demonstrated that they view their role not as physical trainers but as educators (Jones et al. 2004). For example, the former British Lions rugby

union coach Ian McGeechan talked about establishing a learning environment to 'grow players' and coaching individuals 'to understand something'. Similarly, Graham Taylor, the former coach of the England Football team suggested that 'coaching really is a form of teaching' as it primarily involves communicating, learning and maintaining positive relationships with those being taught (Jones et al. 2004: 21). Other research has found that good coaches act like good teachers, as they care about those over whom they have responsibility and constantly engage in reflection on what they do and how they do it (Gilbert and Trudel 2001). This suggests that 'athlete learning as opposed to mechanistic performance is at the heart of coaching' (Jones 2006: 8) and that pedagogic theory should perhaps play a more central role in preparing coaches.

The purpose of this chapter is to identify some of the key pedagogical concepts that could be used to inform coaching practice and consequently enhance athlete learning. The first section deals with learning theories, beginning with the behaviourist perspective before progressing to social learning theory and constructivism, whilst presenting practical examples of how they may be applied to coaching. Teaching styles and multiple intelligence theory are then covered, with particular attention being paid to the work of Mossion (1966) and Gardner (1993). Finally, motivational climate theory (Ames 1992a, 1992b, 1992c) and associated research (Morgan and Carpenter 2002; Morgan et al. 2005a, Morgan et al. 2005b) are drawn upon, and related to coaching practice.

LEARNING THEORIES

Learning has been defined as a change in an individual caused by experience (Mazur 1990). Two main schools of thought and their associated theories have predominated in educational and sport settings since the late nineteenth century, namely behavioural and constructivist. Behavioural learning theories focus on the ways in which the consequences of action – for example praise following improved performance – subsequently change individuals' behaviour (Slavin 2003). Social learning theory, which is a major outgrowth of the behavioural tradition (Bandura 1986), focuses on the ways in which individuals model their behaviour on that of others. Constructivist theories, on the other hand, contend that learners must discover and transform new information to learn effectively.

Behavioural learning theory

Behavioural learning theories attempt to discover principles of behaviour that apply to all human beings (Slavin 2003). Behaviourists, such as Pavlov (1849–1936) in Russia, and Watson (1878–1958) and Thorndike (1874–1949) in the USA, were chiefly concerned with manipulating stimulus (S) and response (R) connections and observing the results. Thorndike's law of effect states that if an act is followed by a satisfying change in the environment, then it is more likely to be repeated in similar situations than an act that is

followed by an unfavourable effect. For example, if an action is followed by praise from a coach it is more likely to be repeated than one that is followed by criticism.

Like Thorndike, Skinner (1904–1990) focused on the use of pleasant or unpleasant consequences to control behaviour, which became known as operant conditioning. Pleasant consequences, such as praise or rewards, were known as reinforcers and were considered to strengthen behaviour, whereas unpleasant consequences, such as public criticism, were known as punishers and were considered to weaken it (Slavin 2003). On this basis, behavioural learning theory suggests that if individuals enjoy the sports coaching and competition environments they are more likely to continue to participate and succeed within them, whereas if they find the consequences unpleasant they are more likely to drop out. Creating an enjoyable and rewarding climate, then, would appear to be an important element of good coaching, although what constitutes an enjoyable and rewarding climate will not be the same for everyone.

The most frequently used reinforcers in the sporting context include praise, attention, grades and recognition in the form of trophies, certificates and badges. However, although such reinforcers are generally considered to be important motivators they are individually perceived, so that we cannot assume that a particular consequence is a reinforcer for everyone. For example, some individuals enjoy being selected to demonstrate a particular sporting skill in front of their peers, whereas others may find it embarrassing and try to avoid being so chosen. If the coach, therefore, selects different participants to demonstrate without first asking or considering if they want to, the supposed reinforcer may, in fact, be acting as a punisher. This, in turn, may cause some participants to perform below their capabilities in order to avoid being chosen to demonstrate publicly.

Reinforcers that are escapes from unpleasant situations are known as negative reinforcers, e.g. not having to do extra training repetitions if the quality of the session is good. A further principle of reinforcement, known as the Premack Principle (Premack 1965) concerns promoting less desired behaviours by linking them to more desired activities. A commonly adopted use of this principle in the PE teaching and sports coaching context is to offer the participants the promise of a game if the previous skill practices are done well enough.

The main guidelines for the use of reinforcement to increase desired behaviours in the classroom setting and everyday life are also applicable to the coaching context (e.g. Baldwin and Baldwin 1998; Walker and Shea 1999). For example, one should firstly decide what behaviours are desired and reinforce these behaviours when they occur. Secondly, the desired behaviours, such as effort, improvement, a positive attitude and fair play, should be communicated clearly and an explanation given as to why they are important. Finally, the behaviours should be reinforced as soon as possible after they occur in order to make the connection between the behaviour and the consequence.

Intrinsic reinforcers are behaviours that individuals engage in for the inherent pleasure without any other reward, whereas extrinsic reinforcers are rewards given to motivate individuals to engage in behaviours in which they might not otherwise do so (Slavin 2003).

There is evidence to suggest that reinforcing children's behaviours that they would have done anyway can undermine intrinsic motivation that is essential for long-term participation in sport (e.g. Deci *et al.* 1999). Therefore, if coaching tasks are designed to be enjoyable and varied and to challenge athletes at their optimum level, extrinsic rewards may not be necessary to maintain interest and motivation, and could, in fact, harm intrinsic motivation. Slavin (2003) suggests that if extrinsic reinforcers are deemed necessary, self-reinforcement or praise should be used first before introducing certificates or prizes. However, practical reinforcers may be necessary to motivate individuals to do important things that they may otherwise not do.

Punishers are consequences that weaken behaviour (Slavin 2003). If an apparently unpleasant consequence does not reduce the behaviour it follows, it is not a punisher. For example, shouting at someone for perceived bad behaviour might give them the attention they desire and enhance their status amongst their peers, thus increasing the likelihood of that behaviour being repeated rather than reducing it. A frequently and successfully used punishment in PE and junior coaching settings is 'time out', where an individual is required to sit out of the activity for a set time. White and Bailey (1990) found that the use of a 'sit and watch' consequence for PE classes virtually eliminated misbehaviour for primary school pupils.

The withdrawal of reinforcers can also be an effective means of weakening behaviours. Take, for example, the situation where one child is continually shouting out the answers in group sessions, thus not giving any of the others an opportunity to contribute. Simply ignoring that child and insisting on 'hands up' for answering will weaken and eventually eliminate the shouting-out behaviour. However, before elimination there may be an increase in the behaviour, known as an extinction burst (Slavin 2003). If the coach recognises this increased behaviour and allows the individual to answer, then the worst possible message will be sent and the individual will think that shouting out works, if he or she keeps doing it.

In behavioural learning theory, new skills are taught or shaped through a series of small reinforcing steps towards the desired final action (Walker and Shea 1999). For example, when teaching a tennis forehand shot to complete beginners, the coach would not simply demonstrate the full shot and then wait until it is performed perfectly to reinforce the learner. Rather, the coach would first reinforce the correct grip of the racket, then the stance, then the contact point, and so on until the complete stroke is performed. Thus the individual's technique is being improved by reinforcing the individual steps towards the final goal. After a point, reinforcement for the early steps may not be necessary to maintain the behaviour because the final outcome of the shot is successful and desirable. Therefore, once the technique has been established, reinforcement for correct responses should become less frequent and also less predictable. The reason for this is that variable schedules of reinforcement, where reward is given following an unpredictable amount of time and behaviour complexity, are much more resistant to extinction than are fixed schedules (Slavin 2003). For example, if the coach praises the tennis player following every good shot and then stops the commendation, the player may become demotivated. However, if the

coach gradually allows the player to increase the number of good shots played before praising, and praises the player at random intervals (variable ratio-schedule), then the player is more likely to continue playing with little or no reinforcement from the coach.

Thus behavioural learning theory can explain and justify many behaviours adopted within the sports coaching context. However, applying the theory is seldom a simple process. For example, what acts as a reinforcer for one person may be a punisher for another. Some players prefer intrinsic reinforcers, whereas others may respond more positively to extrinsic rewards. Individual levels of self-esteem and competence may influence perceptions of, and reactions to, different reinforcers and punishers. Previous experiences with significant others such as parents, teachers/coaches, peers and siblings may also play a part in an individual's response to praise and criticism. Furthermore, some players judge their success in comparison to others (i.e. a normative perception), whereas others are more self-referenced in their personal definition of success (Nicholls 1989) (see Chapter 3: 'Psychology for coaches' for a fuller discussion of this). All these considerations and others may influence the coach's application of behavioural learning theory. Subsequently, it is only through a thorough knowledge of individuals and situational variables, along with reflection on previous experiences, that the best coaches learn to adopt the most effective behaviours and strategies to suit different coaching situations.

Social learning theory

Social learning theory accepts most of the principles of behavioural theories but concentrates more on observational learning or modelling (Bandura 1986). Although it is relevant to athlete learning, it has to date been more commonly cited as an explanation of how coaches develop their own coaching methods and style. In this latter respect, it is akin to serving an apprenticeship (Cassidy *et al.* 2004). In relation to the teaching and learning relationship, Bandura (1986) describes modelling as a four-stage process: attention, retention, motor production and motivation. In the attention stage, the best coaches position themselves appropriately for the group, communicate effectively whilst focusing on a few key coaching points, and demonstrate several times whilst letting the learners know exactly what to look for (Weinberg and Gould 2003). The second stage of retention involves memorising the observed act, which might include mental practice or question-and-answer by the coach to help the learners remember the key points. Physical practice is then required for an effective motor reproduction stage, so that individuals learn to co-ordinate their muscle actions with their thoughts. In order for this phase to be effective, skill progressions and optimal practice time is required. The final stage is motivation, without which the other phases will not be effective. This involves the learners imitating a model because they believe it will increase their chances of gaining success.

Self-regulation is another important concept in social learning theory (Schunk 1999). According to Bandura (1977a), people consider their own behaviour, judge it against their own standards and reinforce or punish themselves accordingly. In order to achieve this

we need an expectation of our own performance. Coaches can foster self-regulation by getting athletes to set self-referenced goals before and during competition and training sessions (Ames 1992b). Such goals could be to improve performance of a particular technique or skill, or to reduce the number of errors made. Thus, self-regulation involves thought processes and begins to bridge the gap between the behavioural perspective and the constructivist approach to learning.

Constructivist learning theories

There is now a consensus of opinion that we do not learn by receiving passively and then recalling what we are taught. Instead, learning involves actively constructing our own meaning linked to what we already know. Constructivist learning theory draws heavily on the work of Piaget (1896–1980) and Vygotsky (1896–1934), both of whom argued that a process of disequilibrium in the light of new information is required in order for effective learning to take place (Slavin 2003). Four key principles from Vygotsky's ideas have helped shape constructivist learning theories. Firstly, he proposed that children learn through social interaction with adults and more capable peers, which links closely with social learning theory. Thus, mixed-ability groups and co-operative learning situations, where individuals are exposed to the thinking of a range of others, are promoted by constructivists. An example of this in the coaching situation would be to set a group task that involves mixed-ability teams working co-operatively to identify the strengths and weaknesses of the opposition, and devising strategies and tactics to outwit them.

A second key concept is the idea that children learn best when they are engaged in tasks that they cannot do alone but can with the assistance of adults or peers; a learning space known as their zone of proximal development (Vygotsky 1978). Individuals should be challenged at different levels as the zone of proximal development will differ between them. Differentiation by task or outcome is, therefore, a key aspect of coaching when a constructivist approach is adopted. Such differentiation could take the form of designing tasks at various levels of difficulty or allowing flexible time for completion of tasks.

The third concept is known as cognitive apprenticeship. This derives from the first two as it refers to the process by which a learner gradually acquires expertise through interaction with an expert, either an adult or a more advanced peer. Within coaching, this could involve a process of mentoring, whereby newly qualified or trainee coaches learn from more experienced practitioners. Similarly, less experienced players can benefit enormously from the guidance of their more experienced teammates.

Finally, Vygotsky's concept of scaffolding or mediated learning sees the teacher or coach as facilitating learning by initially providing a great deal of assistance in the early stages and then gradually reducing it as the learners become more able. In practical terms, this might involve the coach giving more structure to the sessions in the early part of the season and

then allowing the players to take more responsibility and leadership roles as the season progresses. A further example of the application of the scaffolding concept in coaching is the use of practical tasks and associated questioning by the coach to enable the athletes to discover solutions for themselves. This is consistent with a guided discovery teaching style, which will be discussed in the following section. Questioning should be thought-provoking, focusing on why, how and judgement questions rather than just simple recall, thus requiring athletes to construct their own conceptions and, in doing so, enhance their learning.

TEACHING STYLES

There is some confusion over the use of the terms teaching styles and teaching methods in the physical education and sports coaching literature. Stedentop (1991) defines teaching style as the interaction between teacher and pupils, whereas he describes teaching method as an instructional format. Contrary to this, Mosston (1966) contends that teaching styles are independent of personal idiosyncrasies, hence viewing them as methods. For the purpose of this chapter, and in order to avoid confusion, Mosston's definition of teaching style will be adopted, which is synonymous with teaching method.

Mosston's Spectrum of teaching styles is a continuum categorised according to the decisions made by the teacher or learner in the planning (pre-impact), teaching (impact) and evaluation (post-impact) phases of a lesson (Mosston 1966). At one end of the Spectrum is the Command style in which the teacher makes all the decisions across all three phases. At the other end is the Learner Initiated style in which the learner makes almost all the decisions and the teacher acts as a consultant. Between these two, Mosston and Ashworth (2002) systematically identified a series of other styles, each with its own decision-making anatomy (see Table 1.1).

The Spectrum can be further categorised into two distinct clusters, one associated with reproduction and the other with production. In the Reproductive cluster (methods A–E) the central learning outcome is for pupils to reproduce or recall motor skills and known information. Alternatively, in the Productive cluster (methods F–J), the central learning outcome is for pupils to discover new information or unique solutions to problems. The Reproductive and Productive clusters are, therefore, consistent with behavioural and constructivist learning theories respectively, as reviewed earlier in this chapter.

In a study that focused on teacher education, Pichert *et al.* (1976) found that teachers trained in how to use Mosston's teaching Spectrum gave more individual feedback, displayed less domination of lessons and allowed more time on task. Similarly, Ashworth (1983) found that teachers who had been given Spectrum training engaged learners in more time on task, used more feedback, engaged in more private and individual interactions with pupils, gave fewer negative statements, circulated more among children and altered their teaching method more frequently. These behaviours are closely associated with a positive motivational climate (Ames 1992b), as discussed later in this chapter.

Table 1.1 Teaching styles adapted from Mossion and Ashworth (2002)

Style	Essential characteristics	Focus
A. Command	Teacher makes all decisions	Motor development
B. Practice	Pupils practise teacher prescribed tasks	Motor development and autonomy
C. Reciprocal	Pupils work in pairs, one as the teacher and one as the learner	Social, motor and cognitive
D. Self-check	Pupils evaluate their own performance against set criteria	Motor, cognitive, independence
E. Inclusion	Teacher provides alternative levels of difficulty for pupils	Differentiation, motor, cognitive
F. Guided Discovery	Teacher plans a target and leads the pupils to discover it	Cognitive and motor development
G. Convergent Discovery	Teacher presents a problem and pupils find the correct solution	Cognitive, motor, social and affective development
H. Divergent Discovery	Teacher presents a problem and pupils find their own solution	Cognitive, motor, social and affective development
I. Individual Programme	Teacher decides content and pupils plan and design the programme	Cognitive, personal (autonomy) and motor development
J. Learner Initiated	Pupils take full responsibility for the learning process	Personal (autonomy), cognitive and motor development

According to Metzler (2000) the selection of a particular teaching style is dependent on a number of factors including the intended learning outcomes, the teaching context and environment, and the learner's developmental stage. For example, two coaches may have different learning outcomes for a football session. Coach A may want to focus on developing the players' decision-making in games, whereas Coach B may want to concentrate on improving the players' techniques. Based purely on these learning outcomes, a more Productive style, such as Guided Discovery (see Table 1.1) may be more appropriate for Coach A, as his or her aim is to develop players' ability to understand the game and make appropriate decisions in different situations. In order to achieve this, he or she could set up different game situations and guide players through a series of practical tasks whilst asking searching questions, thus allowing the players to work out the most appropriate responses for themselves. Coach B, on the other hand, may be better selecting a style from the Reproductive cluster, such as the Practice style, in order to maximise the opportunity for players to improve their techniques through repetition and practice drills.

Although the learning outcomes are the most important reason for selecting the appropriate style, as Metzler (2000) suggests, the coach should also consider the learner's developmental stage and the teaching environment. If, for example, the learners in Coach B's

session are more experienced players, a Reciprocal style may work better for the technique practices, as they are likely to have the necessary technical knowledge to pass on to others. However, in poor weather conditions, or where Coach B is dealing with large numbers of inexperienced players, the more direct Command or Practice styles may be better employed to keep the session active and to demonstrate appropriate techniques. Metzler (2000) also suggests that when safety is a key consideration, as in situations such as javelin throwing and swimming, the direct instruction or Command style of delivery may be the best one to adopt. However, if developing understanding is more important, the Reciprocal or Discovery styles are better choices.

An important factor in deciding how to coach is that a session may include several different delivery styles depending on the intended learning outcomes of each phase of that session. In fact, the best practitioners can change their style to suit the situation and have the flexibility to use several different styles in one session (Mawer 1995). Therefore, returning to the football examples in the previous paragraphs, a Reproductive style such as Practice may be the most appropriate method for the delivery within a physical conditioning phase. Alternatively, a tactical phase may be best delivered using a more Productive, Discovery method to develop the players' ability to make decisions during the game without relying on the coach.

In discussing the teaching and learning relationship, Tinning *et al.* (1993) suggest that teaching styles should not simply be viewed as strategies to be implemented by the teacher but more like a set of beliefs about the way certain types of learning can be achieved. In which case, they are 'as much statements about valued forms of knowledge as they are about procedures for action' (Tinning *et al.* 1993: 123). This is a firm reminder that coaching or teaching is a social practice that involves the values and philosophy of the individual coach and athletes, the objectives of the activity and the context.

Consistent with a learner-centred philosophy of coaching, Kay (2003) argues that effective learning in sport and PE should involve participants in planned activities that develop four central domains: the physical, social, cognitive and affective, which he terms 'whole learning'. Such an approach echoes Jones' (2006) aforementioned concept of coaches as educators as opposed to physical trainers. The development of the physical domain is the most obvious one and should involve the development and application of core techniques and skills and the application of these to competition-specific situations (Kay 2003). In order to develop the social domain, participants should be involved in interacting with others in co-operative situations, as already discussed under constructivist learning theories and teaching styles such as Reciprocal and Discovery. Cognitive development refers to knowledge and understanding of physical concepts, strategies and tactics, and can be developed by the implementation of Productive styles of teaching such as Guided and Divergent Discovery, or Individual Programme (see Table 1.1). Finally, development of the affective domain should involve helping all pupils to develop self-esteem through successful individual experiences of social, cognitive and physical aptitude (Kay 2003). Teaching styles to facilitate such a development could include Inclusion and Self-Check (see Table 1.1). Arguably, the more traditional direct teaching styles have focused on developing the

physical domain to the exclusion of the social, cognitive and affective domains. Consequently, in order to promote whole learning, coaches and teachers need increasingly to adopt teaching styles that focus on the individual being taught and not on the activity.

MULTIPLE INTELLIGENCES

The differing intelligences of participants are an important consideration in selecting the most appropriate teaching styles (Gardner 1993). Gardner identified several intelligences (see Table 1.2), and suggested that to maximise the learning environment practitioners should use a range of styles to engage them all. Individuals can be high or low in each intelligence with some intelligences being more prominent than others.

In order to exemplify the use of Gardner's multiple intelligences theory in teaching tennis, Mitchell and Kernodle (2004) developed a variety of strategies to maximise learning for the different intelligences. For example, they suggested that linguistic learners could keep a tennis journal to describe the new strokes and strategies they have learned, or discuss the key points of a tennis stroke with the coach. More visual learners might prefer to create a mental image from video or demonstration, whereas more kinesthetic learners might prefer to shadow-practise the coach.

Table 1.2 Multiple intelligences adapted from Gardner (1993)

Intelligence	Learner characteristics
Verbal/linguistic	Capable of using words effectively. Learns most effectively by reading writing, listening and discussing
Visual/spatial	Perceives spatial relationships and thinks in pictures or mental images. Learns most effectively through visual input such as demonstrations, video or viewing diagrams
Kinesthetic	Can manipulate objects and uses a variety of gross and fine motor skills. Learns most effectively through practical participation and interacting with the space around
Musical/rhythmic	Is able to communicate or gain meaning through music. Learns most effectively by listening to and creating music or rhythms
Mathematical	Thinks in, with and about numbers. Learns most effectively through activities that promote logical thinking or using numbers
Interpersonal	Interacts successfully with others. Learns most effectively in co-operative group situations
Intrapersonal	Is introspective and focuses on internal stimuli. Learns most effectively when given time to process information individually, formulate own ideas and reflect on these

From a practical coaching perspective, however, it is a difficult challenge to devise practices to suit all the different intelligences and their various possible combinations. Furthermore, although questionnaires do exist to test for the different intelligences (Gardner 1993), assessing all players and then interpreting their profiles to work out the most effective teaching styles to adopt for each would prove to be a very time-consuming and perhaps unrealistic process. That said, there is certainly potential in a coaching strategy that takes better account of such considerations. Hence the more innovative and creative coaches may find this area worthy of further consideration and exploration.

MOTIVATIONAL CLIMATE

Throughout this chapter links between the various pedagogical concepts presented and the motivational climate created by the coach have been made. The reason for this is that the pedagogical concepts discussed are only useful if they can be applied to the everyday role of a coach, and creating a positive coaching climate where every athlete is encouraged and given equal opportunity to achieve his or her full potential is the key to successfully fulfilling that role. This final section, therefore, deals specifically with how such a climate can be created.

Motivational climate is defined as a situationally induced psychological environment influencing the goals that individuals adopt in achievement situations, such as within a coaching session (Ames 1992a). According to Ames, two types of motivational climate predominate in such situations: a comparative (performance) climate that focuses on normative ability comparisons, and a self-referenced (mastery) climate that focuses on self-referenced effort and improvement. Research on motivational climate in sport and physical education (Carpenter and Morgan 1999; Ebbeck and Becker 1994; Kavussanu and Roberts 1996; Ntoumanis and Biddle 1998; Ommundsen et al. 1998; Papaioannou 1997; Spray 2002; Walling et al. 1993) has revealed that perceptions of a mastery climate are associated with positive motivational responses, such as: perceived competence, enjoyment, effort, learning, intrinsic motivation, a preference for challenging tasks, beliefs that success is due to effort and the development of lifetime skills. In contrast, perceptions of a performance climate are linked with potentially negative responses, such as: high levels of worry, a focus on comparative ability and a preoccupation with enhancing one's social status.

Based on Epstein's (1989) work, Ames (1992b, 1992c) suggested that the task, authority, recognition, grouping, evaluation, and time structures (TARGET) of the learning environment can be manipulated by the teacher to promote a mastery motivational climate (see Table 1.3). In accordance with Ames's suggestion, in order to develop a mastery climate the tasks within coaching sessions should be designed to emphasise self-referenced improvement goals, variety, novelty and differentiation. Consistent with a constructivist perspective and the concepts of empowerment (Kidman 2001) and shared leadership (Jones and Standage 2006), the authority structure involved here should include participants in the

learning process by providing them with choices and opportunities to make decisions. The grouping structure should focus on co-operative group learning and the use of mixed-ability and varied grouping arrangements. Recognition and evaluation should be focused on individual effort and improvement, and be given privately whenever possible, thus providing all participants with equal opportunity for success. Finally, activity and learning time in sessions should be maximised and individuals should be allowed flexible time to complete tasks. Such a mastery-focused teaching intervention has been found to enhance pupils' motivational responses in physical education and sport settings (Morgan and Carpenter 2002, Solmon 1996, Treasure 1993). In contrast, a performance climate emphasises uni-dimensional (i.e. the same task for all) competitive tasks, teacher authority, normatively based public recognition and evaluation, ability groups and inflexible time to practice (see Table 1.3).

Recently, Morgan et al. (2005a) have used the Behavioral Evaluation Strategies and Taxonomies (BEST) (Sharpe and Koperwas 1999) software to develop a computer-based observational measure of the TARCET behaviours (Ames 1992b). This measure allows researchers to film coaching sessions and to systematically code and analyse the coaching behaviours that impact upon athletes' perceptions of the motivational climate. In a study that combined motivational climate and teaching styles in physical education, Morgan et al. (2005b) used the behavioural measure to investigate the effects of different teaching styles on motivational climate and athletes' subsequent responses. Results revealed that Reciprocal and Guided Discovery teaching styles resulted in more mastery-focused TARCET behaviours leading to enhanced athlete motivation. In a subsequent study,

Table 1.3 TARCET behaviours that influence motivational climate (Epstein 1989, Ames 1992b)

TARCET behaviour	Mastery	Performance
Task	Self-referenced goals, multi-dimensional, varied and differentiated	Comparative goals, uni-dimensional and undifferentiated
Authority	Students given leadership roles and involved in decision-making	Teacher makes all the decisions
Recognition	Private recognition of improvement and effort	Public recognition of ability and comparative performances
Grouping	Mixed ability and co-operative groups	Ability groups Large groups
Evaluation	Self-referenced. Private diaries and consultations with teacher based on improvement and effort scores	Normative and public
Time	Flexible time for task completion	Inflexible time for task completion

Morgan and Kingston (in press) developed a mastery intervention programme for physical education practitioners and assessed its effect on TARCET behaviours and pupils' motivation. This intervention was found to improve teachers' reflective abilities in developing their own contextual strategies in relation to utilising mastery-focused TARCET behaviours whilst enhancing the motivation of the more disaffected pupils in the class.

CONCLUSION

The purpose of this chapter has been to establish that, conceptually, coaching is about teaching and learning, and to identify some of the key pedagogical concepts, theories and research that could be applied to coaching. It does not claim to cover all the pedagogical concepts that could be applied to coaching, or that the examples chosen are necessarily the most important ones. It does, however, aim to contribute to the re-conceptualisation of coaching as teaching and to further inform coach education and practice. It is acknowledged that many successful and experienced coaches may not consciously be familiar with the teaching and learning theories presented in the different sections. However, it is suggested that an awareness and knowledge of the key concepts discussed will result in a deeper level of coach reflection and assist coaches in developing a greater understanding of how individuals learn and of the impact their coaching behaviours can have on the learning and motivation of their charges.

Although it is suggested that individuals learn most effectively in a constructivist way, it is important to acknowledge that good coaching practice also draws on many aspects of behaviourist and social learning theory, particularly in the feedback and evaluation processes. Similarly, the best coaches draw from a whole range of learning theories and from both Reproductive and Productive teaching styles to achieve their learning outcomes in successfully dealing with different coaching scenarios. The key message of this chapter, therefore, is that coaches should continually evaluate their sessions within a broad pedagogical theoretical framework which will allow them to become more reflective, better practitioners.

REVIEW QUESTIONS

1. Sir Clive Woodward is quoted as stating that the 'best coaches are good teachers'. Do you agree? Why?
2. Compare and contrast behavioural learning theory with constructivist learning theories. Which do you most agree with? Why?
3. Imagine you are taking your first coaching session with a new team. From a teaching perspective, how do you approach it? What style do you adopt? Why?
4. What are the proposed advantages of adopting a TARCET motivational climate?