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Contact: gala@gre.ac.uk

The integration of single case designs in coaching contexts:

A commentary for applied sport psychologists

Abstract

From personal experiences of working with coaches toward the modification of behaviours and psychological constructs, this commentary highlights how the integration of single case designs can enhance the services of sport psychology practitioners and establish the value and effectiveness of their work. Interventions within golf, soccer and tennis are outlined, targeting factors pertinent to the coach, their athletes or team members and the development of relationships with parents. Single case designs are posited as enabling the implementation of personal, evidence-based interventions that yield more perceptible differences in cognitive, affective and behavioural responses; factors that enhance and underpin the practitioner-coach relationship.

The Integration of Single Case Designs in Coaching Contexts:

A Commentary for Applied Sport Psychologists

Introduction

One of the inevitabilities of working as a coach with a range of athletes or players is that the athletes' needs become more and more individualised as they progress developmentally in terms of sport-specific skill levels and biopsychosocial transitions (Wylleman & Lavallee, 2004). When viewed through a psychological lens, a coach's understanding of the cognitive, physical, motivational and emotional maturity of a young athlete, their level of psychological skills, knowledge and use of psychological strategies represents only a small part of their role. Insights into the athlete's support systems and the parental/family environment or climate surrounding the athlete represent a further responsibility (Henriksen, Stambulova & Roessler, 2010). In addition, their own coaching style and the behaviours that characterise their values as a coach within coach-athlete relationships need to be considered in terms of their compatibility with the athlete's needs and expectations (Jowett & Ntoumanis, 2004). As the athlete moves through adolescence, into young adulthood and beyond, so the intrapersonal, interpersonal and environmental needs of an athlete can be very personal and specific indeed. Performance outcomes may be the ultimate priority for athlete and coach, but many specific internal and external processes and factors may influence those outcomes positively or negatively (Hardy, Jones & Gould, 1996; Henriksen, Diment & Hansen 2011).

Applied sport psychologists (ASP) can differ in their consulting philosophy, sport-specific knowledge base and models of practice. Yet as qualified practitioners, we possess specialist training that allows us to look at the athlete and coach's worlds through our chosen psychological lens, as well as the 'world' that they co-create as coach and athlete together. We may interpret interactions with peers and with parents, and consider the attitudes,

behaviours, and responses that all stakeholders show in a given situation. Through observation, questioning and discussion, we are skilled at conceptualising the strengths and areas for development in athletes and coaches. Then, by appraising all available information in the context of sound theory, practical experience and our personal model, we formulate ideas and strategies for intervention.

Personal experience of working with coaches suggests that evidence of meaningful, tangible improvements in a psychological or performance-related factor motivates their involvement with a practitioner. Therefore, the ability to implement personal, evidence-based interventions, yielding more concrete, perceptible differences in cognitive, affective and, in particular, behavioural responses, is likely to be a key factor underpinning a trusting and successful practitioner-coach relationship (Seligman, 1995; Barker, McCarthy, Jones & Moran, 2011).

With the above points in mind, the following commentary looks to highlight how the implementation of single case designs can inform coaches of the specific needs of their athletes, help identify and modify appropriate coaching behaviours, enhance relationships with athletes, and provide members of the wider support network such as parents with clearly defined enhancement roles. Therefore, as practicing sport psychology consultants we offer brief ideas and examples of interventions that might lend themselves to a single case approach through targeting key factors related to the coach, the athlete, the coach-athlete relationship and the support system.

Targeting Coaching Factors

In the 1980's and 90's, the benefits of group based behavioural interventions in coaching were championed within guidelines for coaches citing the use of before and after data to assess efficacy of interventions on athlete motivation, enjoyment and confidence

(Smoll, Smith & Curtis, 1978; Martin, LePage & Koop, 1983). Support for this approach over 'standard coaching' can be found in a review of research by Martin and Tkachuk (2000) which demonstrated that behavioural approaches applied by coaches were found to be more effective in all but one case across a range of sports. Sport specific target behaviours in athletes have been observed to change through coaching interventions including; reinforcement, modelling, relaxation and video feedback (Komaki & Barnett, 1977; Hazen, Johnstone, Martin & Srikameswaran, 1990; Rogerson & Hrycaiko, 2002). This approach has, therefore, been found to not only be of benefit to athlete performance through coach intervention but has also influenced development of coaching behaviours with the opportunity to pinpoint training approaches and exercises that are of specific and often unique value.

Nevertheless, as an ASP, you may be in a position to work one to one with a coach on issues that are highly specific and personal to them in their occupational role. Indeed, in contemporary consultancy work, provided that you have built a trusting relationship with the coach, one of your key services lies in assisting the coach on their own self-management, leadership, interpersonal skills and skill deployment in coaching and competition settings. Whether taking on a new team or athlete(s), or looking to implement new ideas to current teams and squads, an appreciation of 'where you are now as a coach' is important in order to understand the issues to be addressed and the behaviours targeted for change. Coaches may present issues pertaining to their relationship with athletes and team members, or skill-related areas that they feel they need to focus on to improve their coaching, such as communication in key situations, emotional control after critical incidents, decision making and motivational behaviours. As an ASP, engaging the coach in reflective practice exercises to gain greater insight and making use of video/audio diaries that can capture a greater intensity of feeling

and thought may serve as mechanisms to establish baseline target behaviours for meaningful interventions.

Observation of the coach and information gathered from other relevant sources including interviews with players, other coaches and, when working in elite sport, newspaper and media commentary may also assist in building a rounded perspective that enables greater clarity on target behaviours and current baseline levels in specific contexts (Barker et al., 2011). In essence, one's psychological radar as a consultant tends to extend to the coaching behaviours that one observes in several different contexts allied with the perceived impact that this coaching behaviour has upon athletes. Coaching behaviour in training, in the pre-match or competition period, during match/half time, and when delivering post match debriefs carries significant 'gravitas' with respect to influencing the current and future psychological states of players. Assessments of the coach in these contexts represent important work for the practitioner in optimising both coach and athlete performance and development.

A recent example of this related to the work conducted in a professional youth soccer academy (Harwood, 2008) where observations and discussions with coaches led to an intervention based on enhancing the self-efficacy of youth coaches to integrate mental skills and strategies into their coaching sessions. I (the first author) took a 5 C's approach to assess each coach's baseline efficacy in influencing the development of a young player's motivation and persistence (commitment), their communication skills, their concentration skills, their emotional self-regulation (control), and their levels of confidence in training sessions. Having gained these self-reported levels of coaching efficacy in influencing psychological responses, I worked with coaches on educating specific behaviours and strategies that they could employ in soccer training that would stimulate, teach, or foster each one of the C's in a player. Taking one C at a time over the course of four months, with coaches reflecting on their 5C coaching

efficacy each month, the intervention demonstrated how coaches increased in their confidence to deliver a psychologically-enriched coaching session, and how confidence in coaching ‘communication skills’ positively influenced confidence in influencing the other 4 C’s. Moreover, each coach’s perceptions of the player’s 5C responses in sessions also followed their perceived improvements in (and additions to) their coaching behaviour.

In sum, there is the opportunity for ASP’s to consider a single case approach and sensitively monitor developments in relevant coaching factors that both the practitioner and the coach see as directly relevant not only to the performance and well-being of athletes, but more importantly, to the coach him or herself.

Targeting Athlete Responses

The traditional way of working as an ASP has tended to be based on ‘coach refers athlete’ or athlete refers themselves to a consultant in the midst of a persistent problem or concern. ASP’s are often (and mistakenly) viewed as problem fixers as opposed to architects of hurricane proof, long term psychological foundations in athletes. It is easy as a young ASP to get misguidedly wrapped up in problem removal or behavioural solutions, and single case research’s fascination with negative to positive behaviour change has not helped matters in this respect. Few studies have actually championed a developmental, strengths-based approach whereby the applied scholar is interested in interventions that take behaviours from ‘good to great’ (Collins, 2001) or which strengthen existing psychological skills and behaviours for future developmental periods and transitions where and when the resilience of an athlete is going to be tested more assiduously. Our work too often deals with ‘here and now’ issues at the expense of developmental, preventative consulting.

Of course, in the current world, both types of intervention matter, both are relevant and it is often a case of how forward thinking a coach is as to whether your programme of

work as a practitioner is developmental and strengths-based or short-term and problem-focused. Let's offer two contrasting examples here which show how a single case approach might apply.

Within-performance emotional regulation. The second author was approached by the coach of an elite golfer who presented with issues of 'blowing up' in a round of golf and consistently having a run of bad scores which he felt unable to turn round. The coach and player recognised that they wanted to develop mental toughness and the ability to "dig in" and fight in these situations but the player did not feel that he had the psychological skills to deal with his emotions when performing poorly. In a first general discussion, the coach suggested that he could tell whether his player was in control or not when he was watching him play. To ensure that I (the second author) would not influence the player's behaviours in my own observations during the assessment phase, I made a note to discuss these when finalising and defining the objectives of any intervention. An idea of whether psychological concepts are going to be suitable for behavioural assessment often comes from discussion with other key members of the support network and from peers who, on this occasion, also suggested that they knew when 'they had the player beaten if competing against him'. All of this information when processed would help inform the goals of consultancy.

I had the opportunity to observe the player over four competitive rounds and four practice rounds. I looked specifically at evidence of a post shot routine structure that would provide a framework for the use of mental skills to meet negative emotions that accompanied poor shots. The two settings of practice and competition would provide the opportunity to train the player in the use of strategies and then replicate the benefits of the intervention in the performance arena. Clear markers of the previously highlighted lack of emotional control were evident from the observation of the player's reactions to shots and performance

outcomes. Our focus, therefore, was on developing a structured post shot routine as a framework for implementing a number of psychological skills.

Working with the golfer's coach, a bespoke 'package' of strategies was produced, and to ensure that each was relevant and of use, they were introduced one at a time in training, withdrawn and replaced with another with levels of frustration and performance monitored in keeping with a more complex, withdrawal intervention design. In this instance, the final routine incorporated a 'venting of frustration after the shot', later accompanied by 'motivational self-talk' to refocus on the next shot and finally a physical reminder of the correct action in the form of a practice swing to ensure that maladaptive emotions were left at that spot. The training environment presented a good opportunity to withdraw and adapt strategies in response to player feedback and increase their confidence in each psychological skill. Further validation of meaningful change was evident from coach and peer feedback of competitive performances.

Strengthening fearlessness and body language. A more strengths-based example comes from youth tennis where two of the key areas for long term development and conditioning are firstly to learn how to make 'no fear' decisions and take the ball on; and secondly, to develop a strong, composed yet assertive physical presence and image to the opponent. The first area revolves around strengthening mastery and performance-approach oriented behaviour in players where players transition out of playing slower, mistake-free and sometimes protective/defensive tennis, and learn how to make more fearless, aggressive decisions that are ultimately critical if they are going to progress in the game technically, tactically and physically. A mastery-oriented motivational climate to combat fear of failure is important for coach and practitioner to create. Recognition and reinforcement behaviour for 'making the brave decision when the ball was there to be hit' are important for the coach to show to the player regardless of the outcome of the shot. In this manner, the coach is

conditioning the perception, decision making, and action ‘coupling’ process in a manner whereby the ‘learning error’ is not taking the ball on (i.e., incorrect decision) and success is playing the shot with a lower margin for error. An ASP can assist the coach in setting up a match analysis system that charts the player’s decision making behaviour in points, using the percentages gained as review information for training, goal setting and confidence building. The player may have real technical strengths on the forehand and backhand sides, but as a physically developing junior there is a need to consistently progress the damage that their shot making can do against the improving opposition they will face. The practitioner here can work with the coach on transitioning the mindset of the player so that they gradually learn how to play a higher percentage of aggressive shots in training, practice sets, and matches supported at all times by process-oriented, task involving behaviour by the coach.

A similar system can be employed with the practitioner and coach working with the player on the robustness of their physical image and ‘match behaviour’ in between points and changeovers. Player, coach and practitioner may use video to appraise strengths in current physical responses to good play, mistakes, line call decisions, and tight score lines and reflect upon the cognitions and behaviours that represent the most mentally tough response to that specific situation. With agreements reached, practice sets and matches may be charted and analysed by the coach (live or by video review) who subjectively rates the response of the player between points against the agreed behaviours. The resultant analysis will allow the player, coach and practitioner to gain a profile of player behaviour in serving and receiving games, at certain game scores or set scores, and after winners, mistakes and other adversities. These scores can guide mental training work in practice and be used as a goal setting tool for further matches. The implementation of such systems therefore can play a significant role in promoting communication between players, coaches and other key members of the support network when agreeing on behaviours to be targeted. In addition, awareness of the

behavioural manifestations of important psychological concepts is raised that might otherwise be difficult to monitor for the coach.

Optimising Coach-Athlete, Parental Support and Team Member Relationships

Working in elite level sport as a practitioner offers a reinforcement of how critical the strength of the coach-athlete relationship is both to athlete performance, and to athlete/coach self-esteem and well-being. As an alternative to strengthening coaching or athlete factors separately, the opportunity is present to strengthen the interdependent relationship parameters that characterise effective and healthy coach-athlete relations (Jowett & Ntoumanis, 2004; Rhind & Jowett, 2010). ASP's may use various means of assessing the current quality and 'content' of coach-athlete relations through intake interviews, dyadic profiling or use of coach-athlete questionnaires that serve to reveal the behaviours, attitudes, expectations, needs or values of both parties in respect of optimal functioning. As an example recently within the national governing body system in British Tennis, a great deal of emphasis has been placed on applying self-determination theory (Deci & Ryan, 1980) into coach-player interactions (Paul Dent, Lawn Tennis Association. Personal Communication, September 12th, 2011). Specifically, coaches have been introduced to behaviours related to creating CAR coaching relationships with players (i.e., Competence, Autonomy and Relatedness), and a single case approach lends itself well to tracking the quality of CAR behaviours being sustained in the relationship through observation of coach and perceptions of player. In sum, therefore, key baseline behaviours or characteristics may be identified for both strengthening, maintenance or reduction as appropriate, and contextual interventions may be developed in collaboration with all parties.

Taking the scope of relationship work one stage further as a practitioner, it is of central importance to harness the enthusiasm and support of parents when working in youth

sport. Systematic single case applied research involving coach, parent and player ‘triads’ has been successful in improving the motivational climate, facilitating healthier achievement goals, and promoting more positive competitive cognitions towards matchplay from baseline levels in youth tennis players (Harwood & Swain, 2002). However, it is rare to see practitioners or applied researchers report on interventions that tracked behaviour change in coaches and parents concurrently alongside desired cognitive-behavioural or related outcomes in players. An ongoing example of intervention work at an elite tennis centre in the UK offers an example of how a single case design might work at the group and individual levels.

During assessment with the practitioner, interviews with a specific group of adolescent players yielded inconsistencies and disparity between the climate promoted by the coaches in training sessions and the ‘result’-orientated and narrow definition of success held by players. In addition, the performance evaluations of parents appeared frequently to influence players’ perceptions of efficacy and self-belief. Therefore, an intervention was formulated to increase communication with all members of the players’ support network and to include all parties in coaching philosophies to ensure greater consistency in feedback inside and outside of the training environment.

Brief surveys that identified satisfaction with communication and understanding of training objectives provided a baseline measure at the group level and individual players reported their self-efficacy levels and achievement goals prior to the intervention. The intervention centred on the introduction of an internet-based portal that provided access for players, coaches and parents to learning materials, training logs and programmes of work with educational presentations provided to all groups as to its use. In addition, parents were further integrated into the coaching and support network, and assigned key roles. Training was given in match charting techniques with direction to liaise with the appropriate coach to

highlight key areas of note (technical, physical, psychological); not always to intervene directly, but support and reinforce the strategies introduced by that coach.

This A – B type approach is more typical of work in the applied setting where the removal of educational interventions is not always possible, and retention effects are of central value. Any subsequent lack of confidence one might have in the efficacy of strategies used is outweighed by the meaningful change identified in this case through parent satisfaction and communication at player review evenings, improvements in individual player self belief and consistent feedback of these improvements in follow-up meetings throughout the season.

When working at the team level, we have recently found a great deal of value in encouraging coaches to gain player perceptions of the team's performance environment and feeding collective views into team reflection and debrief meetings. Pain and Harwood (2009) took an intensive approach to assessment and monitoring during a season long intervention with a University soccer team. Based on prior research findings (Pain & Harwood, 2007; 2008), the authors developed the Performance Environment Survey (PES) whereby players were asked to rate the quality of psychological, physical, social, and coaching processes and characteristics that represented key team performance-related factors. Players completed the PES after every game for six games in order to create baseline data on the team's collective aggregate perceptions. These collective perceptions of the team's 'performance environment' were then presented as feedback in a team meeting with players and coaching staff, and used as a stimulus tool for discussion within its members. This open discussion led to action points and strategies for each upcoming match. The PES scores were then reviewed by the team on a match by match basis leading to improvements in reported communication, trust and cohesion over the course of the season. It may be that employing a single case approach, the

specific behaviours of dyads and units in team may be strengthened as part of an overall mission to optimise coordination and motivation processes in the team and its sub-units.

Concluding Remarks

Whether working directly with the coach on their behaviours or educating them on how to implement strategies to their athletes, single case research methods are harmonious with humanistic and client centred principles that guide this consultancy. The delivery of interventions are tailored to the individual after careful assessment and measurement of current behaviours in order to ascertain clear target variables. This ensures that efficacy is assessed at the individual level and that the coach or athlete has gained knowledge of acquired skills and strategies that are of real use in the context in which they have been learnt and tested (Barker et al., 2011). We believe that the success and confidence in any intervention is dependent on the quality of the information gathered during assessment. Observations from multiple perspectives including video-analysis, computer assisted data, psychophysiological assessment gathered by coaches, charting records taken by coaches and peers and those of the sport psychologist can inform discussion leading to inter-observer agreement about the target behaviours to be addressed.

As a practitioner, and particularly a young practitioner, attempting to establish the value and effectiveness of their work, it is worth the greater time and effort to be precise and to formulate your interventions systematically so that each party can be more confident of the methods and results behind their work. In traditional and often frenetic consulting, lack of time is often the reason why practitioners emerge as being 'light' on the quality of monitoring and evaluation that characterises their work. Their consulting may indeed be effective but the evidence and process 'trail' is a bit scattered, and it can be difficult to really pin down the specifics mechanisms of improvement. We encourage practitioners to take on board the

challenge of seeing their clients as single case studies whether their client is the coach or the coach supporting your joint work with the athlete, parent and the team.

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