The impact of video feedback on professional youth football coaches' reflection and practice behaviour: a longitudinal investigation of behaviour change

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Abstract

The aim of this study was to investigate the impact of video feedback on five English youth football coaches' reflection and practice behaviours over a three season period. First, quantitative data were collected using the Coach Analysis and Intervention System (CAIS) during season one and season three. Data from CAIS results showed that over the three seasons the coaches decreased their total instruction and total feedback and increased silence 'on-task'. Four out of the five coaches also increased the use of total questioning behaviour. Second, interviews revealed how video feedback gave structure to reflective conversations that improved self-awareness and provided a trigger for behaviour change. The coaches highlighted how video-based reflection challenged their current understanding and enabled a range of learning sources to support and inform changed coach behaviour.

Introduction

In professional football, there remains an underlying sub-culture that has a pervasive and influential effect on coaches and their behaviour (e.g., Cushion & Jones, 2006; Roderick, 2006). Indeed, research has identified a 'traditional' approach to coaching that is highly directive, autocratic and prescriptive (e.g., Harvey, Cushion, & Massa-Gonzalez, 2010; Potrac & Cassidy, 2006; Williams & Hodges, 2005). Patterns of coaching behaviour tend to be relatively stable, with evidence showing that only minor differences exist as a function of the age or skill level of the players coached (Cushion, Ford & Williams, 2012; Ford, Yates, & Williams 2010; Partington, Cushion & Harvey, 2013). While illustrating what coaches do,

behavioural research has also demonstrated two key things. First, that coaches have limited awareness of what behaviours they use, and how often they use them, (Harvey, Cushion, Cope & Muir, 2013; Partington & Cushion, 2013) and second, that an 'epistemological gap' exists between underpinning knowledge and coach behaviour (Partington & Cushion, 2013; Partington et al., 2013). As a result, advances in coach education would seem fruitless if coaches lack self-awareness and understanding of their behaviour, particularly in practice environments driven by a strong sub-culture, such as professional football.

Changing established practice can be problematic particularly as coaching in football lacks a critical tradition (Cushion, Armour & Jones, 2003). As such, coaches are more likely to be seen sticking with safer, tried and tested, traditional methods that prove their knowledge and expertise (Cushion et al., 2012; Potrac, Jones, & Cushion, 2002). There remains a considerable challenge to address coaches' embodied and unarticulated beliefs. For actual change to happen to coaches' behaviour requires more than just obtaining additional knowledge (Harvey et al., 2010). A key in challenging entrenched practice cultures is providing a catalyst for changing what coaches do through reflection (Cushion et al., 2012). However, this is particularly challenging using short formal coach education episodes as coaches only acquire some of their knowledge and skills from such courses (Cushion et al., 2012). The remainder is acquired through 'apprenticeships of observation' as athletes, experiential learning and mentoring (Cushion et al., 2003; Erickson, Côté, & Fraser-Thomas, 2007; Williams & Hodges, 2005). Therefore, in order for coaches to recognise and address their deeply embedded beliefs and behaviour, prolonged interaction in a contextualised setting supported with continuous reflection on their practice is required (Thompson & Pascal, 2012). However, a coach simply experiencing coaching will not necessarily lead to the development of new knowledge (Gilbert & Trudel, 2006), nor is reflective practice merely a process of requiring learners 'to pause for thought from time-to-time' (Thompson & Pascal, 2012, p. 311).

A number of researchers (e.g., Ghaye, 2001; Gilbert & Trudel, 2001; Irwin, Hanton, & Kerwin, 2004; Knowles, Gilbourne, Borrie, & Nevill, 2001; Nelson & Cushion, 2006, inter-alia) have shown the importance of reflective practice in coach learning. There are many types of reflection (e.g., descriptive, creative; Ghaye, 2001), but in order to change practice *critical reflection* is required (Cushion et al., 2012). The ability to engage in critical reflection (i.e., questioning and challenging current practice, habits, routines, values and beliefs) is a key process for a coach in this situation, and is the method by which coaches come to question what they do and why (Knowles et al., 2001). Coaching is the combination of thought with action. It is important therefore not to just look at observable behaviour and practice or focus on

cognition in isolation, but consider their relationship and interaction in practice (Cushion et al., 2012). In addition, coaching and coach education experiences unfold over time and viewed with this temporal quality, learning is well underway before any coaching course or CPD session begins and continues after it has finished (Hager & Hodkinson, 2009), thus confirming the need to consider coach learning as a more long-term endeavour. In other words, coaching practice and coaches' reflection needs to be considered longitudinally, not as one-off discrete episodes.

Learning through observation and experience can promote and reinforce certain ideological interpretations of knowledge and practice, resulting in practice being guided by uncritical inertia, with outdated knowledge and behaviours being passed on and reproduced by other coaches (Cushion et al., 2012). Consequently, coaches need to reflect critically and make judgements that are meaningful within their particular situation and challenge, rather than reinforce certain beliefs or practices. To enable this, coaches need to engage with, and develop 'tools' that encourage continual self-reflection and evaluation. One such tool is video-based feedback, which offers the potential to generate and support reflection that facilitates deep learning by bringing tacit mental processes to consciousness and conceptualising practice then integrating altered and developed theory into action (Carson, 2008; Trudel, Gilbert, & Tochon, 2001). Using video clips of coaches' actual practice and engaging in reflective conversation is underpinned by a social constructivist view of learning. Carefully examining the thought processes, knowledge, reasoning and learning behind coaches practice offers the potential to raise self-awareness, spark critical reflection and generate behaviour change (Partington & Cushion, 2013; Schön, 1983; Trudel et al., 2001).

Therefore, the aim of this study was to take a longitudinal approach to investigate changes (or stability) in coaches' practice over time, and understand how video-based feedback can inform coaches' interpretations of their experiences; and generate critical reflection on the process by which meaning and knowledge are used to guide actions (Harvey et al., 2010; Potrac et al., 2002). The objective was to not only gain insight into changes in coach behaviour over time but also understand the impact of video-based feedback and how these intersect with, and inform, coaches' reflective practice.

Methodology

Research context

Football talent development in England is managed by professional clubs to produce players for the professional game (The Premier League Elite Player Performance Plan (EPPP), 2011).

Players are scouted and contracted to play for clubs from the age of eight and attend an Academy. Football Academies deliver the youth football performance pathway, which comprises three distinct phases, the foundation phase (under 5 to under 11), the youth development phase (under 12 to under 16) and the professional development phase (under 17 to under 21) (EPPP, 2011). Academies provide a programme of coaching, games, sports science support and education for players across the phases, to 'create a fully integrated environment servicing all aspects of the players' development' (EPPP, 2011 p. 18). Foundation phase players are provided with between 5 and 8 hours of coaching and weekend competitive matches each week, increasing to between 12 and 16 hours in the youth development phase. At the end of the development period players may be offered a professional playing contract at the club. This study took place at a Football Association (F.A.) Premier League Academy over three English football seasons.

Participants

All twelve male professional youth football coaches at one Football Association (F.A.) Premier League Academy were purposefully sampled and took part in the study. However at the end of the three English football seasons only five of the twelve coaches had completed the longitudinal research process. Given the volatile nature of professional football it is not uncommon for coaches to be replaced, or move on to other clubs. However, given that this was a longitudinal study that aimed to investigate the complexities of coaching behaviour, the reduction in sample size did not compromise the purpose of the study. The following section provides an overview of the qualifications and characteristics of the five coaches involved in the study.

Tony (pseudonym)

Tony coached the under 10's. He had a postgraduate level education in strength and conditioning, Post Graduate Certificate in Education*, a F.A. level 3 (UEFA B) coaching award and a full F.A. Youth Award*. Tony had four years coaching experience in this setting and another eight years professional coaching on Fundamental skills at participation level.

Pete (pseudonym)

Pete coached the under 12's. He had a F.A. level 3 (UEFA B) coaching award and a full F.A. Youth Award*. He had been coaching for 12 years of which 4 have been spent in this setting.

Jude (pseudonym)

Jude coached the under 14's. He had ten years coaching experience of which five years was in the current setting. He had a postgraduate level qualification in sports coaching, Post Graduate Certificate in Education, a F.A. level 3 (UEFA B) coaching award and a full F.A. Youth Award*.

Ian (pseudonym)

Ian coached the under 11's with Lee in an official equal role. He had a degree level qualification, a F.A. level 3 (UEFA B) coaching award and a full F.A. Youth Award*. Ian was a former youth team player at another club eight years previous and had four years coaching experience all in this setting.

Lee (pseudonym)

Lee coached the under 11's. He had eleven years coaching experience, three years in the current setting and six years at two other professional football clubs in youth development. Lee had played semi-professional football and was a Further Education lecturer on a sports programme. His qualifications included a degree level qualification, a Post Graduate Certificate in Education, a F.A. level 3 (UEFA B) coaching award and a full F.A. Youth Award*.

Research Overview

A mixed methods case study approach was employed as it had the potential to understand and explain the 'case' in more depth than a single method approach; qualitative data were used to support quantitative data and vice versa (Creswell, 2003; Stark & Torrance, 2005). Case studies should be used in instances where how and why questions are being asked, as well as 'what' questions (Leech & Onwuegbuzie, 2007; Yin, 1994). These apply to the current study, as it attempted to understand the connection between coaches' experiences, reflection and their practice, a similar approach adopted by Jones, Armour and Potrac's (2004) case study investigating the pedagogical practices of elite sport coaches.

The research started with twelve football coaches as participants (all the coaches available in this particular setting) however the longitudinal nature of the study (three seasons) and the turnover of coaching staff meant that only five completed the study in its entirety. Previous research (e.g. Harvey et al., 2013) suggests that participant numbers between 3-5 is acceptable for 'understanding the various nuances, contrasts and patterns of coach behaviour' and allowed 'situational diversity necessary for identifying thematic patterns' (p. 4).

During season one the coaches practice sessions were filmed. At the end of season one, individual interviews took place with the lead researcher and provided the opportunity for coaches to watch their coaching, look at their observational data and discuss their practice. The semi-structured nature of this process gave each coach freedom to discuss the footage and observational data that was perceived as most useful or of most importance. The coaches were also given the videos and the observational data to review in their own time. This strategy gave coaches ownership of the process and helped develop motivation to change (Meeus, Serpa & Cuyper, 2010). During season two, the coaches undertook 'in-house' coach education including a workshop to discuss their beliefs about coaching. They also completed formal coach education in the form of the F.A. Youth Award level one as well as sporadic discussions on their coaching practice with an F.A. coach educator. In between seasons two and three the coaches completed a further formal course, the F.A. Youth Award level two. During season three, the coaches again completed formal coach education, the F.A. Youth Award level three including assessment, while undertaking the same data collection protocol described for season one.

Procedures

Systematic observation

The primary behaviours of the Coach Analysis and Intervention System (CAIS) (see Cushion, Harvey, Muir & Nelson, 2012) were used to identify the five coaches' practice behaviour. This systematic observation tool has been used in a number of studies (e.g. Harvey et al., 2013; Partington & Cushion, 2013; Partington et al., 2013) providing objective, valid and reliable coach behaviour data. After ethics committee approval and participant's informed consent, each coach was filmed in season one and three a minimum of three times (Brewer & Jones, 2002) with an average duration of M = 74.20 minutes observation per session. The three systematic observations were spread out over the length of the season (September to March) to provide an accurate representation of the individual coaches' behaviour (Potrac et al., 2002). In total 30 coaching sessions were observed over the three seasons. Inter- and Intra- observer reliability checks were completed in line with Baumgartner, Jackson, Mahar and Rowe's (2007) recommendation that 30% of the sample should be re-coded. Intra-observer and inter-observer were calculated using the equation: (agreements / (agreements + disagreements)) x 100 (van der Mars, 1989). Inter-observer agreement was 90% and intra-observer was 97% for the coach behaviour data. These figures are above the recommended 85% regarded as acceptable reliability agreement scores (van der Mars, 1989).

Interviews

Systematic observation provided detail on what behaviour coaches' used in practice, while the interviews explored the why of the behaviours as well as the coaches coaching experiences across the three seasons. Three semi-structured interviews (see table 1) took place with each coach. First after season one and two exploring coaches' behaviour (i.e. what behaviour do you use most in your coaching? Why do you use this behaviour most in your coaching?), and coaches' biographies and backgrounds (i.e. how long have you been coaching? What coach education awards do you have?). After season three the interviews examined the changes (or not) in their coaching behaviour and practice and possible reasons for changes (or not). During the first and third interview behavioural data were presented to each coach individually. In total 15 interviews were carried out with each interview lasting between 30 and 70 minutes and produced 149 pages of interview transcript data. The reason for the variance in interview minutes was that some were initial interviews and others were follow up interviews.

Data analysis

Coaching behaviours

Coaches' behaviour was coded and quantified based on operational definitions (See Cushion et al., 2012). Doing this gave the total frequency for individual coaching behaviours used, which then allowed percentages to be calculated. Percentages were calculated by dividing the frequency of individual behaviours by the total number of all behaviours. Descriptive data were calculated for each coach.

Interview data

The coaches' interviews were transcribed and analysed thematically. Patterns or 'themes' were identified through recursively reviewing the data (Glaser & Strauss, 1967), a process of 'moving backwards and forwards between the data set' using a constant comparative approach (Braun & Clarke, 2006, p.86). Given the initial structure from the CAIS and at the same time the exploration of themes in the data the analysis process was not entirely inductive, or deductive. Rather an abductive analysis was adopted that considers how data impacts on theory, but also how theory impacts on data (Morgan, 2007; Nelson & Cushion, 2006).

Results

Results from the individual coaches systematic observations are presented in the following section.

Systematic Observation

Tony

In season one three behaviours comprised almost 58.09% of Tony's total behaviours. Of these, management was the highest at 31.80%, followed by concurrent instruction at 13.37% and then general feedback positive at 12.92% (see table 1). In season three these three behaviours were again the most employed by Tony, however, because concurrent instruction was considerably lower than in season 1 by 5.62%, these behaviours combined equated to less than they did in the first season at 53.30% (see table 1). Tony's use of management and general feedback positive were similar between the two seasons.

Pete

Pete's most employed behaviours were the same as Tony's, in that he mostly used 21.65% management, 21.82% concurrent instruction and then 16.13% general feedback positive (see table 1). In season one these behaviours equated again to almost 59.60% of Pete's total behaviours. Whilst these three behaviours were maintained as the highest in season three at 55.38%, there was a change for each of these behaviours with management increasing 5.70% and concurrent instruction decreasing 5.42% and general feedback positive decreasing 4.50% (see table 2).

Jude

In the same way as Tony and Pete, in season one Jude adopted 23.05% management, 17.42% concurrent instruction and 10.19% general feedback positive more than any other behaviour totalling 50.66% (see table 1). However, unlike Tony and Pete, Jude's behavioural profile changed between season one and season three. So whilst management remained his highest used behaviour at 26.59%, concurrent instruction was lower in season three than it was in season one by 11.94%. Furthermore, Jude's use of specific feedback positive notably increased by 2.69% and in doing so became his second most employed behaviour in season three, with convergent questioning at 9.26% his third highest behaviour (see table 1).

Ian

Again, Ian's behavioural profile was the same as the three coaches' discussed already. However, in season one, the combination of 16.29% management, 42.58% concurrent

instruction and 20.86% general feedback positive equated to 79.73% of the total behaviours employed by Ian. Whilst these same three behaviours were also the highest in season three, his amount of management went up by 7.70%, but his use of concurrent instruction decreased by 29.82%, as did his use of general positive feedback by 6.94% (see table 1).

Lee

In slight contrast to the other four coaches, Lee's most employed behaviours were 27.85% management, 16.25% silence on-task, and 7.92% general reinforcement positive. The amount of concurrent instruction given by Lee was considerably less than that given by the other four coaches (see table 1). The behavioural profile for Lee in season three was similar to that of season one with the exception of confer with assistant that increased 5.69% (see table 1).

Insert table 1 Here

While it was not the aim of this study to aggregate and compare the five coaches behaviour, the presentation of the results in figure 1 allows an understanding of the changes in the pattern of the coach's behaviour, and shows something of the impact of taking part in the study (see figure 1).

Insert figure 1 Here

Interviews

Results from the abductive analysis are presented in the following analysis and discussion section as exemplar quotes. The key themes were:

- Video, self-awareness and reflection.
- Reflective conversation and its impact on practice.
- Other learning and its impact on practice (e.g. FA Youth Awards, teaching qualification, social media, internet, observation of coaches and discussion with coaches).

Analysis and Discussion

Video, self-awareness and reflection

According to Cassidy (2010, p. 143), changing 'time-honoured practices' or 'day-to-day conventions' in coaching is very difficult to achieve; this is because many coaches 'find it difficult to reflect upon, and possibly critique, taken for granted practices that have become integral to their sense of self'. Indeed, relying solely on ones' self-perception of what works closes down conversations, blunts knowledge and stifles creativity, all of which, if left unchallenged, produces stagnation and creates a climate of self-referential and self-justifying knowledge structures (Abraham, Collins, & Martindale, 2006). In the present study, the use of video allowed coaches to move beyond their reliance on self-perceptions, which proved to be an inaccurate account of their practice, and develop an increased self-awareness of what they actually did. As Tony, Jude and Pete noted: 'Feedback from the first season, you don't realise you're doing it until someone filmed you and told you. I thought I was coaching one way and obviously I wasn't', 'I realised there that I wasn't quite behaving as a coach as I wanted' and finally Pete 'watching yourself coach and looking at the different results I've got from the different years, it opens your eyes'. Lee reinforced this view further linking to a particular behaviour:

> Yeah, I need to reduce my instructions. That's a big thing I'm surprised it's that high. I think with most teachers it's a thing, they talk a little bit too much, and looking at videos of myself coaching, that's apparent as well. So that's something I will have to work on.

The evidence in this case supports the need to use more objective methods that allow coaches to reflect on their practice; deep learning, indicated by whether coaches intend to change or preserve their coaching practice, relies on reflection (Leduc, Culver, & Werthner, 2012). Light, Evans, Harvey, & Hassanin (2015) argue for informed reflection that bridges the gap between experience and coach education. In the present study, the research process resulted in the CAIS being used as a means of analysing what behaviours coaches employed, and using these data as a means to support reflection and discussions about individual's practice. Jude explained: 'looking at my actual behaviours, looking at the videos, actually that's the trigger of the learning and it helps me improve as a coach. It [the research process] highlighted my behaviours'. Thus, the research process was in fact an intervention, where video feedback sparked the reflective conversation process thus breaking the cycle of self-reference and self-justification.

Over a decade ago, Trudel et al. (2001) found similar unexpected learning where coaches naturally benefitted from reflecting on their practice from another perspective. Trudel et al. (2001) explained that participants' learned through developing an ongoing partnership

between the researcher and coach that created a context for shared reflection, and noted the value of video and shared reflection in the construction of coaching knowledge. These findings resonate with the present study with data supporting Trudel et al.'s (2001) claims in the context of professional youth football coaching. Pete and Ian stated:

> Looking through my behaviours in a one-on-one has helped me understand what I am actually doing. If you hadn't sat down and spoke to someone about it I don't think you'd have looked at it properly. I think talking about the way you're coaching with someone was important for me to improve.

> Taking part in this research project, some of the results made you look back and change. Certainly the video analysis was excellent so you're viewing it how other people viewed it. When I was asked about what I was doing there and then in my actual practice it made me think about it in more detail to a point that I felt I wanted to change.

These data suggest that reflection, using technology alongside opportunities to discuss their practice in light of the data, was a key strategy to enable coaches' beliefs and dispositions to be made explicit (Christensen, 2011) and also allow coaches the opportunity to become more aware of their practice (Gilbert & Trudel, 2006).

Reflective conversation and its impact on practice

To develop as a practitioner requires thinking critically about practice (Butler, 2005). However, there can be a divergence between perceptions and action, and educators and practitioners need to pay attention to the gap (McCallister, Blinde, & Weiss, 2000). In the present study, video helped to avoid the risk of coaches unwittingly collecting evidence corresponding to what they believed or expected to see, thus receiving self-confirmation of their actions. Jude stated 'the video showed me clearly what I was doing when I coached' and Tony suggested 'someone else analyse and observe you and give you feedback rather than just doing your own feedback and your own reviews. I think reviewing what you've done is important'. The 'genuine feedback on the outcomes of action' afforded by video methods was crucial in allowing practitioners to step 'outside their taken-for-granted world' (Eraut, 2000, p. 123) and close the distance between practical theories-in-use and more abstract espoused theories. In support of this claim, Jude reported that 'highlighting the behaviours has been great for me in terms of it gives me an awareness of what behaviours I'm actually implementing'.

Building on the work of Schön (1983), Gilbert and Trudel (2001) developed a reflective conversation framework. This framework, acting through a coach's role frame, follows a systematic process of identifying the issue that needs reflecting on, before working through a number of potential strategies to solve the issue. The issues or dilemmas of practice are the mechanism by which any reflection or engagement with experiential learning are triggered (Gilbert & Trudel, 2005; Schön, 1983). Pete highlighted:

> Being filmed and then watching yourself is quite hard to do, you find out that you're repeating yourself half the time or you doing things that you didn't even know. Just by watching the videos I can see things I want to change or even my strengths.

Importantly, learning through coaching practice is more than the passive perception and internalisation of an external reality (Varela, Thompson, & Rosch, 1991). It involves the projection of the individual's experiences and an act of interpretation shaped by that experience (Light, 2008). In other words, learning within a coaching environment cannot be reduced to a linear process of internalising pre-existing knowledge (Davis & Sumara, 1997; Light, 2008). In theories of experiential learning through reflection (e.g. Gilbert & Trudel 2004; Schön, 1983), there remains an important interplay *between* experience and reflection. Effective reflective practice involves careful consideration of both 'seeing' and action to enhance the possibilities of learning through experience. Therefore, a process of learning from reflection suggests that knowledge must become recognisable and articulated (Loughran, 2002; Cushion & Jones, 2006). This process is considerably more than highlighting the problem and then providing the solution. There remains a subtle difference between being told what to do and understanding practice (Loughran, 2002). This means that experiencing situations in a certain way becomes a genuine learning experience, an episode that carries personal meaning (White, 1988). This personal meaning appears key as a link to ownership of a reflective process, practitioners 'will pay more attention to information that has immediate and personal meaning for them' (Gilbert & Trudel, 2001, p. 32). As both Tony and Lee highlight: 'seeing myself coach really rams home what I need to improve on' and 'looking back at the videos of my own coaching sessions helps me recognise the areas I want to improve'. When working through potential strategies to solve an issue the coaches drew on their knowledge as well as the knowledge and experience of other coaches to assist them with their reflections. Reflection can be more effective when coaches have a 'critical friend' whose role is to promote deeper levels of reflection (Knowles et al., 2001). Ian highlighted: 'our centre manager spoke with me about

a change in the way we were coaching to implement different styles. We also had the help of Pete Smith [pseudonym] from the FA so that had an influence'. Indeed, Strean, Senecal, Howlett and Burgess (1997) argue that coaches, who are provided with the opportunity to discuss their coaching issues with other's develop more effective coaching strategies in which to deal with their coaching issues, as Jude and Lee both highlighted:

> Talking to other coaches actually helped me learn. For me, it's not just a case of being in there and doing it and then coming away and that's it and I'll automatically learn, I think the process of talking to other coaches…for example, something might happen on the Sunday or in the game, speaking to them about it and how I dealt with it and what I could do and building from their advice but more gauging me in some sort of thinking…the discussion with colleagues, the discussion with coaches is really important.

> This year again from the gaffer at the club who has passed down his stuff through to the head of coaching who I have a lot of chats with. In terms of knowledge of the sport, I've sort of improved that area from these people…I think it certainly helps in terms of understanding the sport better and having a greater knowledge of the game. So I can transfer that knowledge onto the players, one way or another.

Other learning and its impact on practice

Throughout the longitudinal research process the coaches tapped into a range of sources that were meaningful and relevant to their own coaching practice to develop and evaluate their coaching strategies, this included other coaches at the club, research evidence, and experiences from formal coach education episodes, in particular the FA Youth Modules. All five coaches (i.e. Tony, Pete, Jude, Lee and Ian) reinforced this view noting that:

> The modules have changed people's ways of thinking they've adapted a lot of teaching and gone down the teaching route rather than a lot of instruction, instruction, instruction. I definitely made a conscious effort in terms of, I think I went down the route of seeing mistakes and trying to correct them for them and notably then they learned. I think some of the stuff on the FA modules have obviously changed the way I've thought about coaching, in terms of setting up the correct environment and saying things differently to let them learn by doing.

> Talking to other coaches around the Youth Modules… opened my eyes to a few things that I didn't know and how much I was using certain coaching types or certain coaching manners. The courses have helped my knowledge.
>
> I understood some of the theory and stuff behind what was happening, or what they were trying to say, the coach, educator on the coaching course, I understand that side but actually that transfer into practise, I think helped on the Youth Module. The Youth Award certainly helped in terms of transferring that theory into some sort of ideas of the practise.
>
> I genuinely believe my coaching has changed through the new youth modules, I think they're massively important for education of young players, and also by observing other coaches who have also been through the youth module process as well.
>
> They actually showed you the different ways of structuring sessions to get the other benefits out of coaching and relating it more physiologically how players are made, the make-up of players and children in general in terms of athletic performance and how kids learn. It was very research based and science based rather than the typical FA based, in terms of this is how it's always been done. It was a different approach.

The situation, whereby the critical incident or evidence from video was in conflict with the coaches' network of knowledge, experiences or beliefs, has been referred in the learning literature to as cognitive dissonance (Moon, 2004) or disjuncture (Jarvis, 2009). Disjuncture is portrayed as a moment of potential for learning and it would seem that the coaches sought a range of learning sources to change their practice and to maintain accordance or harmony in their biography (Jarvis, 2009) (e.g. FA Youth Awards, teaching qualification, social media, internet, observation of and discussion with other coaches). However, there is a danger in picking out ideas that fit into beliefs and collecting evidence to confirm the decision, while rejecting concepts that maybe more challenging. This has been labelled 'safe simulation', and is reported relatively commonly in the literature (e.g. Abraham et al., 2006; Cushion et al., 2003). This approach can enable practitioners to adopt seemingly novel changes to their coaching while preserving their underlying assumptions about coaching and norms of practice (Light & Robert, 2010). Another significant issue with this learning approach is the potential for rejecting or disregarding information that could otherwise be highly valuable.

Implications for Practice

Video-based reflection helped coaches increase their self-awareness, change behaviour and provided the trigger for learning. Relying on coaches' thoughts and perceptions alone does not provide accurate measurements of what coaches actually do (Partington & Cushion, 2013). For coaches to become more self-actualising practitioners requires that they think more critically about their practices (Butler, 2005). McAllister et al. (2000) highlight this point as they recognize the lack of congruence between stated beliefs and action, and subsequently call for educators and practitioners to pay attention to this gap. In other words, use of video-based reflection helped make vital learning processes more explicit, facilitating coaches' judgements of what works, as well as making them more aware of their practice in context.

In the present study video-based reflection provided the coaches with the mechanism to recognise their actual coaching practice. If coaches are unable to accurately recall their coaching practices through their own subjective experiences, alternative methods are needed which present them with the means to reflect on actual practice (Carson, 2008). Furthermore, the use of video-based reflection could also potentially permit coaches to reflect at a deeper level with appreciation of the nuanced, intricate, and complex nature of coaching (Harvey et al., 2010; Jones & Wallace, 2005) and address issues of practice that have become deep-rooted in a non-reflective manner (Thompson & Pascal, 2012). Consistent with the work of Douglas and Carless (2008), the results here suggested that coaches' were open to changing perspectives as the scenarios unfolded, allied to having time to reflect upon and discuss identified issues with others. This could be interpreted as a good starting point for developing more open mindedness in coaches, thus holding the potential to enhance the change process in coach education and to develop more reflective practitioners. As the longitudinal nature of this research has demonstrated change to coaches' practice is a long-term process and will not happen quickly. In addition, whilst the coaches stated the positive impact of coach education they found it difficult to directly link changes in specific coach behaviour to these statements. So whilst coaches may perceive these courses to have an impact, it appeared more as an explanation for their practice now, rather than an indicator for the reasons for change.

Coach education courses have been criticised for their de-contextualised and one size fits all curricula approach that does not allow for coaches to discuss issues that are most pertinent to them (Nelson, Cushion & Potrac, 2006). To develop autonomous learners who are capable of taking ownership of their own learning (Taylor & Garratt, 2010) coach education should consider carefully the learning needs of individual coaches (e.g. Gilbert & Trudel, 2001; Nelson & Cushion, 2006), and the contexts in which they coach. For coaches this means engaging in an ongoing reflective process (Butler, 2006; Ghaye & Ghaye, 1998) that is situated

within their knowledge and experiences. As Leamson (2000) implies, it is not the doing that results in learning, but rather the thinking about the doing. The present study provides evidence that the use of contextualised video-based reflection can provide a mechanism for coaches to link new knowledge to their individual coaching.

Conclusion

Reflective thinking is not straightforward for coaches (Hughes, Lee & Chesterfield, 2009; Knowles et al., 2001). Hughes et al. (2009) argue that for reflection to impact on their thinking, coaches need to be engaged within a structured reflective process. However, self-reflection has been criticised because coaches' reflections are limited by their own knowledge (Hughes et al., 2009), and restricted by their coaching beliefs (Parajes, 1992). In other words, coaches only reflect on issues they are aware of and are unable to reflect beyond their consciousness. The use of video (Carson, 2008) and discussion with other coaches (Knowles et al., 2001) offers the potential of enabling deeper, more critical levels of reflection. Indeed in the present study contextualised video-based reflection and discussions with others (including the research process) helped the coaches develop self-awareness of their practice, trigger learning, develop and reinforce new knowledge and provide examples of knowledge in practice.

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692 Table 1. Percentage of coaching behaviours used by the five English professional football coaches in season 1 and 3.
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Coach (pseudonyms)	Tony			Pete			Jude			Ian			Lee		
Season/difference	1	3	Dif.	1	3	Dif.	1	3	Dif.	1	3	Dif.	1	3	Dif.
Pre instruction	2.59	1.86	-0.73	4.46	5.72	+1.26	4.74	6.36	+1.62	0.86	2.58	+1.72	6.53	3.49	-3.04
Concurrent instruction	13.37	7.75	-5.62	21.82	16.40	-5.42	17.42	5.48	-11.94	42.58	12.76	-29.82	6.74	4.27	-2.47
TOTAL instruction	15.96	9.61	-6.35	26.28	22.12	-4.16	22.16	11.84	-10.32	43.44	15.34	-28.10	13.27	7.76	-5.51
Convergent questioning	8.05	7.16	-0.89	5.44	6.49	+1.05	7.23	9.26	+2.03	1.35	6.11	+4.76	6.18	7.69	+1.51
Divergent questioning	0.89	0.41	-0.48	0.04	0.32	+0.28	0.17	0.44	+0.27	0.07	0.42	+0.35	0.00	0.50	+0.50
Questioning - other	0.00	0.00	0.00	4.42	8.52	+4.10	3.03	5.84	+2.81	2.11	3.32	+1.21	3.47	4.70	+1.23
TOTAL questioning	8.94	7.57	-1.37	9.90	15.33	+5.43	10.43	15.54	+5.11	3.53	9.85	+6.32	9.65	12.89	+3.24
Response to question	5.77	6.46	+0.69	4.63	6.08	+1.45	1.67	2.59	+0.92	2.24	2.48	+0.24	3.89	3.77	-0.12
Specific reinforcement (+)	5.46	4.89	-0.57	1.80	2.43	+0.63	9.44	12.11	+2.69	3.36	4.48	+1.12	5.14	2.14	-3.00
Specific reinforcement (-)	2.42	1.16	-1.26	1.43	1.31	-0.12	4.43	2.59	-1.84	1.65	2.79	+1.14	4.79	2.99	-1.80
Total specific reinforcement	7.87	6.12	-1.75	3.23	3.74	+0.51	13.88	14.70	+0.82	5.00	7.27	+2.27	9.93	5.13	-4.80
General reinforcement (+)	12.92	12.93	+0.01	16.13	11.63	-4.50	10.19	9.48	-0.71	20.86	13.92	-6.94	7.92	8.05	+0.13
General reinforcement (-)	0.49	0.12	-0.37	1.27	0.36	-0.91	0.27	0.13	-0.14	0.92	0.16	-0.76	0.07	0.43	+0.36
Total general reinforcement	13.42	13.05	-0.37	17.36	11.99	-5.37	10.47	9.61	-0.86	21.78	14.07	-7.71	7.99	8.48	+0.49
Corrective reinforcement	3.09	2.68	-0.41	4.63	2.61	-2.02	8.97	7.68	-1.29	2.50	4.74	+2.24	6.04	6.34	+0.30
TOTAL feedback	24.38	21.85	-2.53	25.22	18.34	-6.88	33.32	31.99	-1.33	29.28	26.08	-3.20	23.96	19.95	-4.01
Positive modelling	1.57	1.46	-0.11	2.25	1.53	-0.72	1.98	0.79	-1.19	2.34	2.42	+0.08	1.53	1.85	+0.32
Negative modelling	0.22	0.58	+0.36	1.88	0.63	-1.25	0.85	0.39	-0.46	0.00	0.16	+0.16	0.42	0.57	+0.15
TOTAL modelling	1.79	2.04	+0.25	4.13	2.16	-1.97	2.83	1.18	-1.65	2.34	2.58	+0.24	1.95	2.42	+0.47
Silence - on task	5.32	7.16	+1.84	2.70	2.79	+0.09	4.94	7.94	+3.00	1.41	12.92	+11.51	16.25	20.01	+3.76
Silence - off task	0.09	0.12	+0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	-0.07
TOTAL silence	5.41	7.28	+1.87	2.70	2.79	+0.09	4.94	7.94	+3.00	1.41	12.92	+11.51	16.32	20.01	+3.69
Management	31.80	32.62	+0.82	21.65	27.35	+5.70	23.05	26.59	+3.54	16.29	23.99	+7.70	27.85	23.50	-4.35
Confer with assistant	0.45	1.92	+1.47	3.07	3.65	+0.58	0.72	1.45	+0.73	0.69	5.54	+4.85	2.43	8.12	+5.69
Humour	4.79	2.56	-2.23	1.96	2.16	+0.20	0.82	0.75	-0.07	0.66	0.84	+0.18	0.56	1.57	+1.01
Hustle	0.58	0.06	-0.52	0.12	0.00	-0.12	0.07	0.00	-0.07	0.00	0.00	0.00	0.14	0.00	-0.14
Punishment	0.00	0.00	0.00	0.29	0.00	-0.29	0.00	0.04	+0.04	0.00	0.37	+0.37	0.00	0.00	0.00
Scold	0.22	0.06	-0.16	0.00	0.00	0.00	0.00	0.09	+0.09	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL punitive	0.22	0.06	-0.16	0.29	0.00	-0.29	0.00	0.13	+0.13	0.00	0.37	+0.37	0.00	0.00	0.00
TOTAL behaviours	100.00	100.00	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00	-	100.00	100.00	-

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Figure 1. Changes in coaches combined behaviours (i.e. total instruction, total questioning, total feedback, total silence) and silence ‘on-task’.