

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

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14 **Abstract**

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

25  
26 **Introduction**

27 In professional football, there remains an underlying sub-culture that has a pervasive and  
28 influential effect on coaches and their behaviour (e.g., Cushion & Jones, 2006; Roderick,  
29 2006). Indeed, research has identified a 'traditional' approach to coaching that is highly  
30 directive, autocratic and prescriptive (e.g., Harvey, Cushion, & Massa-Gonzalez, 2010;  
31 Potrac & Cassidy, 2006; Williams & Hodges, 2005). Patterns of coaching behaviour tend to  
32 be relatively stable, with evidence showing that only minor differences exist as a function of  
33 the age or skill level of the players coached (Cushion, Ford & Williams, 2012; Ford, Yates, &  
34 Williams 2010; Partington, Cushion & Harvey, 2013). While illustrating what coaches do,

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

42 Changing established practice can be problematic particularly as coaching in football  
43 lacks a critical tradition (Cushion, Armour & Jones, 2003). As such, coaches are more likely  
44 to be seen sticking with safer, tried and tested, traditional methods that prove their knowledge  
45 and expertise (Cushion et al., 2012; Potrac, Jones, & Cushion, 2002). There remains a  
46 considerable challenge to address coaches’ embodied and unarticulated beliefs. For actual  
47 change to happen to coaches’ behaviour requires more than just obtaining additional  
48 knowledge (Harvey et al., 2010). A key in challenging entrenched practice cultures is  
49 providing a catalyst for changing what coaches do through reflection (Cushion et al., 2012).  
50 However, this is particularly challenging using short formal coach education episodes as  
51 coaches only acquire some of their knowledge and skills from such courses (Cushion et al.,  
52 2012). The remainder is acquired through ‘apprenticeships of observation’ as athletes,  
53 experiential learning and mentoring (Cushion et al., 2003; Erickson, Côté, & Fraser-Thomas,  
54 2007; Williams & Hodges, 2005). Therefore, in order for coaches to recognise and address  
55 their deeply embedded beliefs and behaviour, prolonged interaction in a contextualised  
56 setting supported with continuous reflection on their practice is required (Thompson &  
57 Pascal, 2012). However, a coach simply experiencing coaching will not necessarily lead to  
58 the development of new knowledge (Gilbert & Trudel, 2006), nor is reflective practice  
59 merely a process of requiring learners 'to pause for thought from time-to-time' (Thompson &  
60 Pascal, 2012, p. 311).

61 A number of researchers (e.g., Ghaye, 2001; Gilbert & Trudel, 2001; Irwin, Hanton,  
62 & Kerwin, 2004; Knowles, Gilbourne, Borrie, & Nevill, 2001; Nelson & Cushion, 2006,  
63 inter-alia) have shown the importance of reflective practice in coach learning. There are many  
64 types of reflection (e.g., descriptive, creative; Ghaye, 2001), but in order to change practice  
65 *critical reflection* is required (Cushion et al., 2012). The ability to engage in critical reflection  
66 (i.e., questioning and challenging current practice, habits, routines, values and beliefs) is a  
67 key process for a coach in this situation, and is the method by which coaches come to  
68 question what they do and why (Knowles et al., 2001). Coaching is the combination of

69 thought with action. It is important therefore not to just look at observable behaviour and  
70 practice or focus on cognition in isolation, but consider their relationship and interaction in  
71 practice (Cushion et al., 2012). In addition, coaching and coach education experiences unfold  
72 over time and viewed with this temporal quality, learning is well underway before any  
73 coaching course or CPD session begins and continues after it has finished (Hager &  
74 Hodkinson, 2009), thus confirming the need to consider coach learning as a more long-term  
75 endeavour. In other words, coaching practice and coaches' reflection needs to be considered  
76 longitudinally, not as one-off discrete episodes.

77 Learning through observation and experience can promote and reinforce certain  
78 ideological interpretations of knowledge and practice, resulting in practice being guided by  
79 uncritical inertia, with outdated knowledge and behaviours being passed on and reproduced  
80 by other coaches (Cushion et al., 2012). Consequently, coaches need to reflect critically and  
81 make judgements that are meaningful within their particular situation and challenge, rather  
82 than reinforce certain beliefs or practices. To enable this, coaches need to engage with, and  
83 develop 'tools' that encourage continual self-reflection and evaluation. One such tool is  
84 video-based feedback, which offers the potential to generate and support reflection that  
85 facilitates deep learning by bringing tacit mental processes to consciousness and  
86 conceptualising practice then integrating altered and developed theory into action (Carson,  
87 2008; Trudel, Gilbert, & Tochon, 2001). Using video clips of coaches' actual practice and  
88 engaging in reflective conversation is underpinned by a social constructivist view of learning.  
89 Carefully examining the thought processes, knowledge, reasoning and learning behind  
90 coaches practice offers the potential to raise self-awareness, spark critical reflection and  
91 generate behaviour change (Partington & Cushion, 2013; Schön, 1983; Trudel et al., 2001).

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

99

## 100 **Methodology**

### 101 *Research context*

102 Football talent development in England is managed by professional clubs to produce players  
103 for the professional game (The Premier League Elite Player Performance Plan (EPPP), 2011).  
104 Players are scouted and contracted to play for clubs from the age of eight and attend an  
105 Academy. Football Academies deliver the youth football performance pathway, which  
106 comprises three distinct phases, the foundation phase (under 5 to under 11), the youth  
107 development phase (under 12 to under 16) and the professional development phase (under 17  
108 to under 21) (EPPP, 2011). Academies provide a programme of coaching, games, sports  
109 science support and education for players across the phases, to ‘create a fully integrated  
110 environment servicing all aspects of the players’ development’ (EPPP, 2011 p. 18).  
111 Foundation phase players are provided with between 5 and 8 hours of coaching and weekend  
112 competitive matches each week, increasing to between 12 and 16 hours in the youth  
113 development phase. At the end of the development period players may be offered a  
114 professional playing contract at the club. This study took place at a Football Association  
115 (F.A.) Premier League Academy over three English football seasons.

116

### 117 *Participants*

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

#### 127 *Tony (pseudonym)*

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

132

#### 133 *Pete (pseudonym)*

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

136

137 *Jude (pseudonym)*

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

142

143 *Ian (pseudonym)*

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

148

149 *Lee (pseudonym)*

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

156

### 157 ***Research Overview***

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

166 The research started with twelve football coaches as participants (all the coaches  
167 available in this particular setting) however the longitudinal nature of the study (three  
168 seasons) and the turnover of coaching staff meant that only five completed the study in its  
169 entirety. Previous research (e.g. Harvey et al., 2013) suggests that participant numbers

170 between 3-5 is acceptable for ‘understanding the various nuances, contrasts and patterns of  
171 coach behaviour’ and allowed ‘situational diversity necessary for identifying thematic  
172 patterns’ (p. 4).

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

188

## 189 ***Procedures***

### 190 *Systematic observation*

191 The primary behaviours of the Coach Analysis and Intervention System (CAIS) (see  
192 Cushion, Harvey, Muir & Nelson, 2012) were used to identify the five coaches’ practice  
193 behaviour. This systematic observation tool has been used in a number of studies (e.g.  
194 Harvey et al., 2013; Partington & Cushion, 2013; Partington et al., 2013) providing objective,  
195 valid and reliable coach behaviour data. After ethics committee approval and participant’s  
196 informed consent, each coach was filmed in season one and three a minimum of three times  
197 (Brewer & Jones, 2002) with an average duration of  $M = 74.20$  minutes observation per  
198 session. The three systematic observations were spread out over the length of the season  
199 (September to March) to provide an accurate representation of the individual coaches’  
200 behaviour (Potrac et al., 2002). In total 30 coaching sessions were observed over the three  
201 seasons. Inter- and Intra- observer reliability checks were completed in line with  
202 Baumgartner, Jackson, Mahar and Rowe’s (2007) recommendation that 30% of the sample  
203 should be re-coded. Intra-observer and inter-observer were calculated using the equation:

204 (agreements / (agreements + disagreements)) x 100 (van der Mars, 1989). Inter-observer  
205 agreement was 90% and intra-observer was 97% for the coach behaviour data. These figures  
206 are above the recommended 85% regarded as acceptable reliability agreement scores (van der  
207 Mars, 1989).

208

### 209 *Interviews*

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

223

### 224 *Data analysis*

#### 225 *Coaching behaviours*

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

231

#### 232 *Interview data*

233 The coaches' interviews were transcribed and analysed thematically. Patterns or 'themes'  
234 were identified through recursively reviewing the data (Glaser & Strauss, 1967), a process of  
235 'moving backwards and forwards between the data set' using a constant comparative  
236 approach (Braun & Clarke, 2006, p.86). Given the initial structure from the CAIS and at the  
237 same time the exploration of themes in the data the analysis process was not entirely

238 inductive, or deductive. Rather an abductive analysis was adopted that considers how data  
239 impacts on theory, but also how theory impacts on data (Morgan, 2007; Nelson & Cushion,  
240 2006).

241

## 242 **Results**

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

### 245 *Systematic Observation*

#### 246 *Tony*

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

254

#### 255 *Pete*

256 Pete's most employed behaviours were the same as Tony's, in that he mostly used 21.65%  
257 management, 21.82% concurrent instruction and then 16.13% general feedback positive (see  
258 table 1). In season one these behaviours equated again to almost 59.60% of Pete's total  
259 behaviours. Whilst these three behaviours were maintained as the highest in season three at  
260 55.38%, there was a change for each of these behaviours with management increasing 5.70%  
261 and concurrent instruction decreasing 5.42% and general feedback positive decreasing 4.50%  
262 (see table 2).

263

#### 264 *Jude*

265 In the same way as Tony and Pete, in season one Jude adopted 23.05% management, 17.42%  
266 concurrent instruction and 10.19% general feedback positive more than any other behaviour  
267 totalling 50.66% (see table 1). However, unlike Tony and Pete, Jude's behavioural profile  
268 changed between season one and season three. So whilst management remained his highest  
269 used behaviour at 26.59%, concurrent instruction was lower in season three than it was in  
270 season one by 11.94%. Furthermore, Jude's use of specific feedback positive notably



271 increased by 2.69% and in doing so became his second most employed behaviour in season  
272 three, with convergent questioning at 9.26% his third highest behaviour (see table 1).

273

274 *Ian*

275 Again, Ian's behavioural profile was the same as the three coaches' discussed already.  
276 However, in season one, the combination of 16.29% management, 42.58% concurrent  
277 instruction and 20.86% general feedback positive equated to 79.73% of the total behaviours  
278 employed by Ian. Whilst these same three behaviours were also the highest in season three,  
279 his amount of management went up by 7.70%, but his use of concurrent instruction decreased  
280 by 29.82%, as did his use of general positive feedback by 6.94% (see table 1).

281

282 *Lee*

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

288

289 Insert table 1 Here

290

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

295

296 Insert figure 1 Here

297

298 ***Interviews***

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

301

- Video, self-awareness and reflection.

302

- Reflective conversation and its impact on practice.

- 303 • Other learning and its impact on practice (e.g. FA Youth Awards, teaching  
304 qualification, social media, internet, observation of coaches and discussion with  
305 coaches).

306

## 307 **Analysis and Discussion**

### 308 *Video, self-awareness and reflection*

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

324

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

328

329 The evidence in this case supports the need to use more objective methods that allow coaches  
330 to reflect on their practice; deep learning, indicated by whether coaches intend to change or  
331 preserve their coaching practice, relies on reflection (Leduc, Culver, & Werthner, 2012).  
332 Light, Evans, Harvey, & Hassanin (2015) argue for informed reflection that bridges the gap  
333 between experience and coach education. In the present study, the research process resulted  
334 in the CAIS being used as a means of analysing what behaviours coaches employed, and  
335 using these data as a means to support reflection and discussions about individual’s practice.  
336 Jude explained: ‘looking at my actual behaviours, looking at the videos, actually that’s the

337 trigger of the learning and it helps me improve as a coach. It [the research process]  
338 highlighted my behaviours'. Thus, the research process was in fact an intervention, where  
339 video feedback sparked the reflective conversation process thus breaking the cycle of self-  
340 reference and self-justification.

341 Over a decade ago, Trudel et al. (2001) found similar unexpected learning where  
342 coaches naturally benefitted from reflecting on their practice from another perspective.  
343 Trudel et al. (2001) explained that participants' learned through developing an ongoing  
344 partnership between the researcher and coach that created a context for shared reflection, and  
345 noted the value of video and shared reflection in the construction of coaching knowledge.  
346 These findings resonate with the present study with data supporting Trudel et al.'s (2001)  
347 claims in the context of professional youth football coaching. Pete and Ian stated:

348

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

353

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

358

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

363

### 364 ***Reflective conversation and its impact on practice***

365 To develop as a practitioner requires thinking critically about practice (Butler, 2005).  
366 However, there can be a divergence between perceptions and action, and educators and  
367 practitioners need to pay attention to the gap (McCallister, Blinde, & Weiss, 2000). In the  
368 present study, video helped to avoid the risk of coaches unwittingly collecting evidence  
369 corresponding to what they believed or expected to see, thus receiving self-confirmation of  
370 their actions. Jude stated 'the video showed me clearly what I was doing when I coached' and

371 Tony suggested ‘someone else analyse and observe you and give you feedback rather than  
372 just doing your own feedback and your own reviews. I think reviewing what you’ve done is  
373 important’. The ‘genuine feedback on the outcomes of action’ afforded by video methods was  
374 crucial in allowing practitioners to step ‘outside their taken-for-granted world’ (Eraut, 2000,  
375 p. 123) and close the distance between practical theories-in-use and more abstract espoused  
376 theories. In support of this claim, Jude reported that ‘highlighting the behaviours has been  
377 great for me in terms of it gives me an awareness of what behaviours I’m actually  
378 implementing’.

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

385

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

389

390 Importantly, learning through coaching practice is more than the passive perception and  
391 internalisation of an external reality (Varela, Thompson, & Rosch, 1991). It involves the  
392 projection of the individual’s experiences and an act of interpretation shaped by that  
393 experience (Light, 2008). In other words, learning within a coaching environment cannot be  
394 reduced to a linear process of internalising pre-existing knowledge (Davis & Sumara, 1997;  
395 Light, 2008). In theories of experiential learning through reflection (e.g. Gilbert & Trudel  
396 2004; Schön, 1983), there remains an important interplay *between* experience and reflection.  
397 Effective reflective practice involves careful consideration of both ‘seeing’ and action to  
398 enhance the possibilities of learning through experience. Therefore, a process of learning  
399 from reflection suggests that knowledge must become recognisable and articulated  
400 (Loughran, 2002; Cushion & Jones, 2006). This process is considerably more than  
401 highlighting the problem and then providing the solution. There remains a subtle difference  
402 between being told what to do and understanding practice (Loughran, 2002). This means that  
403 experiencing situations in a certain way becomes a genuine learning experience, an episode  
404 that carries personal meaning (White, 1988). This personal meaning appears key as a link to

405 ownership of a reflective process, practitioners ‘will pay more attention to information that  
406 has immediate and personal meaning for them’ (Gilbert & Trudel, 2001, p. 32). As both Tony  
407 and Lee highlight: ‘seeing myself coach really rams home what I need to improve on’ and  
408 ‘looking back at the videos of my own coaching sessions helps me recognise the areas I want  
409 to improve’. When working through potential strategies to solve an issue the coaches drew on  
410 their knowledge as well as the knowledge and experience of other coaches to assist them with  
411 their reflections. Reflection can be more effective when coaches have a ‘critical friend’  
412 whose role is to promote deeper levels of reflection (Knowles et al., 2001). Ian highlighted:  
413 ‘our centre manager spoke with me about a change in the way we were coaching to  
414 implement different styles. We also had the help of Pete Smith [pseudonym] from the FA so  
415 that had an influence’. Indeed, Streat, Senecal, Howlett and Burgess (1997) argue that  
416 coaches, who are provided with the opportunity to discuss their coaching issues with other’s  
417 develop more effective coaching strategies in which to deal with their coaching issues, as  
418 Jude and Lee both highlighted:

419

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

426

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

432

### 433 ***Other learning and its impact on practice***

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

439

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

447  
448 Talking to other coaches around the Youth Modules... opened my eyes to a few things  
449 that I didn't know and how much I was using certain coaching types or certain coaching  
450 manners. The courses have helped my knowledge.

451  
452 I understood some of the theory and stuff behind what was happening, or what they were  
453 trying to say, the coach, educator on the coaching course, I understand that side but  
454 actually that transfer into practise, I think helped on the Youth Module. The Youth Award  
455 certainly helped in terms of transferring that theory into some sort of ideas of the practise.

456  
457 I genuinely believe my coaching has changed through the new youth modules, I think  
458 they're massively important for education of young players, and also by observing other  
459 coaches who have also been through the youth module process as well.

460  
461 They actually showed you the different ways of structuring sessions to get the other  
462 benefits out of coaching and relating it more physiologically how players are made, the  
463 make-up of players and children in general in terms of athletic performance and how kids  
464 learn. It was very research based and science based rather than the typical FA based, in  
465 terms of this is how it's always been done. It was a different approach.

466  
467 The situation, whereby the critical incident or evidence from video was in conflict with the  
468 coaches' network of knowledge, experiences or beliefs, has been referred in the learning  
469 literature to as cognitive dissonance (Moon, 2004) or disjuncture (Jarvis, 2009). Disjuncture  
470 is portrayed as a moment of potential for learning and it would seem that the coaches sought  
471 a range of learning sources to change their practice and to maintain accordance or harmony in  
472 their biography (Jarvis, 2009) (e.g. FA Youth Awards, teaching qualification, social media,  
473 internet, observation of and discussion with other coaches). However, there is a danger in  
474 picking out ideas that fit into beliefs and collecting evidence to confirm the decision, while  
475 rejecting concepts that maybe more challenging. This has been labelled 'safe simulation', and

476 is reported relatively commonly in the literature (e.g. Abraham et al., 2006; Cushion et al.,  
477 2003). This approach can enable practitioners to adopt seemingly novel changes to their  
478 coaching while preserving their underlying assumptions about coaching and norms of  
479 practice (Light & Robert, 2010). Another significant issue with this learning approach is the  
480 potential for rejecting or disregarding information that could otherwise be highly valuable.

481

## 482 **Implications for Practice**

483 Video-based reflection helped coaches increase their self-awareness, change behaviour and  
484 provided the trigger for learning. Relying on coaches' thoughts and perceptions alone does  
485 not provide accurate measurements of what coaches actually do (Partington & Cushion,  
486 2013). For coaches to become more self-actualising practitioners requires that they think  
487 more critically about their practices (Butler, 2005). McAllister et al. (2000) highlight this  
488 point as they recognize the lack of congruence between stated beliefs and action, and  
489 subsequently call for educators and practitioners to pay attention to this gap. In other words,  
490 use of video-based reflection helped make vital learning processes more explicit, facilitating  
491 coaches' judgements of what works, as well as making them more aware of their practice in  
492 context.

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

509 So whilst coaches may perceive these courses to have an impact, it appeared more as an  
510 explanation for their practice now, rather than an indicator for the reasons for change.

511 Coach education courses have been criticised for their de-contextualised and one size  
512 fits all curricula approach that does not allow for coaches to discuss issues that are most  
513 pertinent to them (Nelson, Cushion & Potrac, 2006). To develop autonomous learners who  
514 are capable of taking ownership of their own learning (Taylor & Garratt, 2010) coach  
515 education should consider carefully the learning needs of individual coaches (e.g. Gilbert &  
516 Trudel, 2001; Nelson & Cushion, 2006), and the contexts in which they coach. For coaches  
517 this means engaging in an ongoing reflective process (Butler, 2006; Ghaye & Ghaye, 1998)  
518 that is situated within their knowledge and experiences. As Leamson (2000) implies, it is not  
519 the doing that results in learning, but rather the thinking about the doing. The present study  
520 provides evidence that the use of contextualised video-based reflection can provide a  
521 mechanism for coaches to link new knowledge to their individual coaching.

522

## 523 **Conclusion**

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

536

## 537 **References**

538 Abraham, A., Collins, D., & Martindale, R. (2006). The coaching schematic: Validation  
539 through expert coach consensus. *Journal of Sport Sciences*, 24, 549-564.

540 Baumgartner, T. A., Jackson, A. S., Mahar, M. T., & Rowe, D. A. (2007). *Measurement for*  
541 *evaluation in physical education and exercise science* (8th ed.). Boston: McGraw-Hill.



542 Brewer, C.J., & Jones, R.L. (2002). A five-stage process for establishing contextually valid  
543 systematic observation instruments: The case of rugby union. *Sport Psychologist*, 16(2), 138-  
544 159.

545 Butler, J. (2005). TGFU pedagogy: Old dogs, new tricks and puppy school. *Physical*  
546 *Education and Sport Pedagogy*, 10, 225-240.

547 Carson, F. (2008). Utilizing Video to Facilitate Reflective Practice: Developing Sports  
548 Coaches. *International Journal of Sports Science and Coaching*, 3(3), 381-390.

549 Cassidy, T. (2010). Understanding athlete learning and coaching practice: Utilising ‘practice  
550 theories’ and ‘theories of practice’. In J. Lyle, & C. Cushion (Eds.), *Sports Coaching:*  
551 *Professionalisation and Practice* (pp. 177-191). London: Elsevier.

552 Christensen, D. (2011). Disagreement, question-begging and epistemic self-criticism.  
553 *Philosophers imprint*, 11(6), 1-22.

554 Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods*  
555 *approaches* (2nd ed.). Thousand Oaks, CA: Sage.

556 Cushion, C. J., Ford, P., & A. M. (2012). Coach behaviour and practice structures in youth  
557 soccer: Implications for talent development. *Journal of Sport Sciences*, 30(15), 1631-1641.

558 Cushion, C. J., Harvey, S., Muir, R., & Nelson, L. (2012). Developing the coach analysis and  
559 intervention system (CAIS): Establishing validity and reliability of a computerized systematic  
560 observation instrument. *Journal of Sport Sciences*, 30(1), 201–216.

561 Cushion, C. J., & Jones, R. L. (2006). Power, discourse and symbolic violence in professional  
562 youth soccer: The case of Albion FC. *Sociology of Sport Journal*, 23, 142–161.

563 Cushion, C. J., Armour, K. M., Jones, R. L. (2003). Coach education and continuing  
564 professional development: Experience and learning to coach. *Quest*, 55, 215-230.

565 Davis, B., & Sumara, D. (1997). Cognition, complexity and teacher education. *Harvard*  
566 *Educational Review*, 67, 105-125.

567 Douglas, K., & Carless, D. (2008). Using Stories in Coach Education. *International Journal*  
568 *of Sports Science and Coaching*, 3(1), 33-49.

569 Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British*  
570 *Journal of Educational Psychology*, 70, 113-136.

571 Erickson, K., Côté, J., & Fraser-Thomas, J. (2007). The sport experiences, milestones, and  
572 educational activities associated with the development of high performance coaches. *The*  
573 *Sport Psychologist*, 21, 302-316.

574 Ford, P. R., Yates, I., & Williams, A. M. (2010). An analysis of practice activities and  
575 instructional behaviours used by youth soccer coaches during practice: Exploring the link  
576 between science and application. *Journal of Sports Sciences*, 28(5), 483–495.

577 Ghaye, T. (2001). Reflection: Principles and practices. *Faster, Higher, Stronger*, 10, 9-11.

578 Ghaye, T., & Ghaye, K. (1998). *Teaching and learning through critical reflective practice*.  
579 London: Fulton Publishers.

580 Gilbert, W., & Trudel, P. (2001). Learning to coach through experience: Reflection in model  
581 youth sport coaches. *Journal of Teaching in Physical Education*, 21, 16-34.

582 Gilbert, W., & Trudel, P. (2005). Learning to coach through experience: Conditions that  
583 influence reflection. *Physical Educator*, 62, 32-44.

584 Gilbert, W.D., & Trudel, P. (2004). Analysis of coaching science research published from  
585 1970- 2001. *Research Quarterly for Sport and Exercise*, 75, 388-399.

586 Gilbert, W., & Trudel, P. (2006). The coach as a reflective practitioner. In R. Jones (Ed.), *The*  
587 *sports coach as educator: Reconceptualising sports coaching* (pp. 113-127). London, UK:  
588 Routledge.

589 Glaser, B.G, & Strauss, A.L. (1967). *The discovery of grounded theory: strategies for*  
590 *qualitative research*. New York: Aldine.

591 The Premier League (2011). *Elite Player Performance Plan*. London: The Premier League.

592 Trudel, P., Gilbert, W., & Tochon, F.V. (2001). The use of video to study pedagogical  
593 interactions in sport. *International Journal of Applied Semiotics*, 2(1-2), 89-112.

594 Hager, P., & Hodkinson, P. (2009). Moving beyond the metaphor of transfer of learning.  
595 *British Educational Research Journal*, 35(4), 619-638.

596 Harvey, S., Cushion, C. J., Cope, E., & Muir, B. (2013). A season long investigation into the  
597 coaching behaviours of three collegiate coaches as a function of practice state. *Sports*  
598 *Coaching Review*. 2, 13-32.

599 Harvey, S., Cushion, C. J., & Massa-Gonzalez, A. N. (2010). Learning a new method:  
600 Teaching Games for Understanding in the coaches' eyes. *Physical Education and Sport*  
601 *Pedagogy*, 15(4), 361–382.

602 Hughes, C., Lee, S., & Chesterfield, G. (2009). Innovation in sports coaching: the  
603 implementation of reflective cards. *Reflective Practice*, 10(3), 367-384.

604 Irwin, G., Hanton, S., & Kerwin, D. (2004). Reflective practice and the origins of elite  
605 coaching knowledge. *Reflective Practice*, 5, 426-442.

606 Jarvis, P. (2009). *Learning to be a person in society*. London: Routledge.

607 Jones, R. L., Armour, K. M. & Potrac, P. (2004). *Sports coaching cultures: from practice to*  
608 *theory*. London: Routledge.

609 Jones, R. L., & Wallace, M. (2005). Another bad day at the training ground: Coping with  
610 ambiguity in the coaching context. *Sport, Education and Society*, 10(1), 119-134.

611 Knowles, Z., Gilbourne, D., Borrie, A., & Neville, A. (2001). Developing the reflective  
612 sports coach: A study exploring the processes of reflection within a higher education  
613 coaching programme. *Reflective Practice*, 2, 185-207.

614 Leamson, R. (2000). Learning as Biological Brain Change. *Change*, 32(6), 34-40.

615 Leduc, M., Culver, D. M., & Werthner, P. (2012). Following a coach education programme:  
616 Coaches' perceptions and reported actions. *Sports Coaching Review*, 1(2), 135-150.

617 Onwuegbuzie, A.J., & Leech, N.L. (2007). A call for qualitative power analyses. *Quality and*  
618 *Quantity: International Journal of Methodology*, 41, 105-121.

619 Light, R. (2008). Complex learning theory - Its epistemology and its assumptions about  
620 learning: implications for physical education. *Journal of Teaching in Physical Education*, 27,  
621 21-37.

622 Light, R. L., Evans, J., Harvey, S., & Hassanin, R. (2015). *Advances in rugby coaching: An*  
623 *holistic approach*, London: Routledge.

624 Light, R., & Robert, J. E. (2010). The impact of Game Sense on elite level level rugby  
625 coaches' practice: A question of pedagogy. *Physical Education and Sport Pedagogy*, 15(2)  
626 103-115.

627 Loughran, J. J. (2002). Effective reflective practice: In search of meaning in learning about  
628 teaching. *Journal of Teacher Education*, 53(1), 33-43.

629 McCallister, S. G., Blinde, E. M., & Weiss, W. M. (2000). Teaching values and  
630 implementing philosophies: Dilemmas of the coach. *Physical Educator*, 57(1), 35-45.

631 Meeûs, M., Serpa, S., & De Cuyper, B. (2010). The effects of video feedback on coaches'  
632 behavior and the coach-athlete relationship. *Journal of Clinical Sport Psychology*, 4, 323-  
633 340.

634 Moon, J. (2004). *A handbook of reflective and experiential learning*. London: Routledge.

635 Morgan, D.L. (2007). Paradigms lost and paradigms regained. *Journal of Mixed Methods*,  
636 1(1), 48-76.

637 Nelson, L., & Cushion, C. J. (2006). Reflection in coach education: The case of the NGB  
638 coaching certificate. *The Sport Psychologist*, 20(2), 174-183.

639 Nelson, L., Cushion, C., & Potrac, P. (2006). Formal, nonformal and informal coach learning:  
640 A holistic conceptualisation. *International Journal of Coaching Science*, 1(3), 247-259.

641 Pajares, M.F. (1992). Teachers' beliefs and educational research: cleaning up a messy  
642 construct. *Review of Educational Research*, 62(3), 307-333.

643 Partington, M., Cushion, C. J. & Harvey, S. (2013). An investigation of the effect of athletes'  
644 age on the coaching behaviours of professional top-level youth soccer coaches. *Journal of*  
645 *Sport Sciences*, 32(5), 403-414.

646 Partington, M. & Cushion, C. J. (2013). An investigation of the practice activities and  
647 coaching behaviours of professional top-level youth soccer coaches. *Scandinavian Journal of*  
648 *Medicine and Science in Sports*, 23(3), 373-382.

649 Potrac, P., & Cassidy, T. (2006). The coach as 'a more capable other'. In R. Jones (Ed.), *The*  
650 *sports coach as educator: Reconceptualising sports coaching* (pp. 39-50). London:  
651 Routledge.

652 Potrac, P., Jones, R., & Armour, K. (2002). "It's all about getting respect": The coaching  
653 behaviours of a top-level English football coach. *Sport, Education and Society*, 7(2), 183-  
654 202.

655 Roderick, M. (2006). *The work of professional football: A labour of love?* Abingdon:  
656 Routledge.

657 Schön, D. (1983). *The reflective practitioner: How professionals think in action*. San-  
658 Francisco, CA: Harper Collins.

659 Stark, S. & Torrance, H. (2005). Case study. In B. Somekh & C. Lewin (Eds.), *Research*  
660 *Methods in the Social Sciences* (pp. 33–40). Thousand Oaks, CA: Sage.

661 Streat, W. B., Senecal, K. L., Howlett, S. G., & Burgess, J. M. (1997). Xs and Os and what  
662 the coach knows: Improving team strategy through critical thinking. *The Sport Psychologist*,  
663 11, 243–256.

664 Thompson, N., & Pascal, J. (2012). Developing critically reflective practice. *Reflective*  
665 *Practice: International and Multidisciplinary perspectives*. 13(2) 311-325.

666 van der Mars, H. (1989). Observer reliability: Issues and procedures. In P. W. Darst, D. B.  
667 Zakrajsek, & V. H. Mancini (Eds.), *Analyzing physical education and sport instruction* (pp.  
668 53–80). Champaign, IL: Human Kinetics Publishers.

669 Varela, F.J., Thompson, E., & Rosch, E. (1991). *The embodied mind: Cognitive science and*  
670 *human experience*. Cambridge, MA: MIT Press.

671 White, R.T. (1988). *Learning science*. London: Blackwell.

672 Williams, A.M., & Hodges, N. (2005). Practice, instruction and skill acquisition in soccer:  
673 challenging tradition. *Journal of Sports Sciences*, 23(6), 637–650.

674 Yin, R. (1994). *Case study research: Design and methods* (2nd ed.). Beverly Hills, CA: Sage  
675 Publishing.

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