

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.

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