

1 **‘Suspended above, and in action’: Think Aloud as a reflective practice tool.**

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

Abstract

Think Aloud (TA) involves an individual verbalising his or her thoughts throughout the duration of a task. A case study approach examined the experiences of one football coach (Dave) as he engaged in four coaching sessions using TA. Dave completed four reflective diaries, supported by an overall narrative account, TA transcriptions, and two interviews. The aim of the case study was to gain a deeper understanding of Dave's experiences of using TA in his context. Interpretative Phenomenological Analysis was utilised and revealed a superordinate theme of "suspended above himself" and actively engaging in the coaching session, which reflects the essence of TA for Dave. This metaphor captures the view that the TA process enabled Dave to move between analysing his own performance as if suspended above himself, and engaging in the action of the coaching session. Five subordinate themes were also generated: improved self-awareness; pedagogy; communication skills; feelings of apprehension; and distraction. These findings provide a rich description of the experience of TA and a novel glimpse into the potential pitfalls associated with TA that will inform coach educators. A further significant contribution is provided by highlighting relevant theoretical considerations that will inform future studies.

Keywords: Think Aloud, Reflection, Coach Education, Soccer.

Introduction

Extant sport coaching literature outlines reflection as a complex process that encourages coaches to examine their experiences by questioning themselves in the context of their practice (Knowles, Gilbourne, Cropley, & Dugdill, 2014). This questioning approach has been promulgated as a source of learning and thus reflective practice is viewed as an important part of coach learning (Gilbert & Trudel, 2002; Moon, 2013). Indeed, for some time now, it has been argued that reflective practice should be central to coach education programmes (Cushion, Armour, & Jones, 2003; Knowles, Borrie, & Telfer, 2005).

Historically, Dewey (1933) identified reflection as a phenomenon that moves people away from routine thinking towards a more careful and critical specialised form of thinking. Schon (1983) developed the basic concept further and identified three forms of reflection (reflection-in-action, reflection-on-action, and retrospective reflection-on-action). Gilbert and Trudel (2002) define *reflection-in-action* as the process of reflecting ‘in the midst of activity,’ such as during a coaching session when an intervention-based reflection can immediately be made. This form of reflection differs from *reflection-on-action* when a coach may reflect on prior situations in between practices and matches. Finally, *retrospective reflection-on-action* occurs when a coach thinks back to a particular situation, where there is no longer an opportunity for reflection-in-action and reflection-on-action (Nelson & Cushion, 2006). Schon’s argument outlines that effectively engaging in these forms of reflection could lead to professional growth through experience (Schon, 1983; 1987). Based on these arguments, Gilbert and Trudel (2002) have suggested that reflective practice provides a framework for understanding how coaches learn and how coaches could develop their knowledge within applied practice.

Since Gilbert and Trudel’s (2002) suggestion, much coach education policy has promulgated reflective practice as a positive learning mechanism for coaches. Even though reflection has become an integral part of coach education programmes (Knowles, Borrie, & Telfer, 2005; Cushion, Armour, & Jones, 2003), it is not however wholly unproblematic. For instance, Huntley et al. (2014) discussed reflection as a skill that requires learning and suggested that coach education programmes do not allow coaches to learn reflecting skills. Additionally, following the completion of coach education programmes there is often little or no support nor re-accreditation for coaches working in their respective clubs (Cropley, Miles, & Peel, 2012), and therefore coaches may not have the opportunity to enhance their reflective practice skills. Thus Peel, Cropley, Hanton, and Fleming (2013) suggested that in order to realise the potential of reflective practice as a learning tool, governing bodies should create practical methods and processes to support coaches through their reflective journey following completion of coach education certification.

With the notion of reflective practice as a professional development tool in mind, it is important to note that extant practical methods of reflection have been critiqued. In particular, traditional methods aimed at developing reflective practitioners including diaries (Tang, 2002) and reflective journals (Mallert, 2013) have been scrutinised by authors such as Dixon, Lee, & Ghaye (2013) suggesting that they have become outdated and too ‘mechanistic’. Accordingly, Dixon et al. (2013) called for more personalised, novel approaches to reflection. In particular, there is a need to develop methods that encourage, aid, and facilitate coaches to *reflect-in-action*.

Reflection-in-action, the form of reflection pertinent to this paper, presents a number of challenges. Specifically, researchers suggest that capturing and accessing reflections during coaching sessions may disrupt the quality of the coaching process (Cropley et al., 2015; Whitehead et al., 2016a). However, there is a dearth of research considering the efficacy of reflection-in-action in sport coaching. Moreover, there is a need for studies that explore the practical application of methods that facilitate reflection-in-action. On this basis, it is worth exploring if novel methods such as Think Aloud (TA) could capitalise on the advancements in technology and provide coaches with an alternative method of reflecting and adapting to the fluid and dynamic context of sport coaching (Evans, 2016).

Think Aloud

TA has been used within sport research to understand cognition in athletes (Whitehead et al., 2016b; Whitehead et al., 2017; Calmeiro & Tenenbaum, 2011; Nicholls & Polman, 2008). Within this type of research, athletes have been asked to continuously verbalise their thought processes (i.e., Think Aloud) as they are engaging in a task. These verbalisations are often recorded via Dictaphone and their audio files analysed from a content analysis perspective. It is important to note that

participants within these studies were not instructed to reflect *on* their thought processes, but rather the data was being used solely to understand athlete cognition. Outside of the sporting domain, TA has been used as a learning tool within medical settings to develop the clinical reasoning skills of undergraduate nursing students (Banning, 2008). These students were asked to verbalise their thought processes in order to aid their awareness of how and why they were making patient-specific decisions and diagnoses. This research emphasised the reflective process by promoting the self-awareness of these nursing students. Within sport coaching research, Whitehead et al. (2016a) adopted a similar approach to Banning (2008), where TA was used as a tool to develop self-awareness and reflection of coaching practice in action. More specifically, Whitehead and colleagues (2016a) asked coaches to TA whilst coaching, and where possible to ‘step back’ and reflect-in-action. Following the use of TA over two separate coaching sessions, coaches revealed that they had improved their communication and pedagogy skills and had become more self-aware of their coaching practice. Through further examination of their TA content, the coaches’ verbalisations and reflections shifted from mostly description and became more about their internal feelings, analysis, and action planning. However, it is important to note the coaches within this study emphasised the need to spend more time when implementing a new reflective technique into practice (Whitehead et al., 2016a).

Previous research (Whitehead et al., 2016a) on TA in the coaching context suggests that only a small number of coaches are being given the opportunity to both understand and personally develop this reflective process. Accordingly, there is a need for more situated case studies on TA in coaching practice. In particular, there is a need for studies with a more longitudinal use of TA. Indeed, such studies are warranted, as illustrated by Cushion’s (2016) suggestion that reflective practice within coaching has been adopted uncritically and has become a subtle and persuasive exercise of power. This critique of current reflective practice in coach education argues that coaches are not only being directed on what to think, but also how to think (Cotton, 2001). In contrast, there is a need for coaches to understand their own social context and take additional ownership of the reflective process (Cushion, 2016). Furthermore, Cushion (2016) argued that reflective practice research in coaching has

been portrayed as a natural, unbiased, and objective process, bounded by a positivist epistemology. If this is the case, then this poses an issue for coach education research given that coaching is a phenomenon that involves dynamic, complex, and diffused networks of power relations (Denison & Avner, 2011; Jones & Corsby, 2015). Therefore a subjectively-oriented epistemology should be considered when examining reflective practice methods. On this basis, it could be argued that TA, which is a novel and personalised tool, may facilitate autonomous and subjective reflective processes within sports coaching. Furthermore, coaches have reported a preference for continuous professional development (CPD) that enables them to develop their practice through engagement in the practice itself (Nelson, Cushion & Potrac, 2013). With this in mind, it is reasonable to posit that the grounded nature of TA holds much potential for those coaches who wish to learn from situated experiences. In alignment with the advantages, and in response to previous criticisms of reflective practice (Cushion, 2016), the current study aims to further understand how TA can be used over a prolonged period of time. More specifically, the current research is co-constructed with an individual soccer coach, with an aim of answering the following:

Can TA be used as an effective tool to facilitate reflection-in-action with a women's amateur soccer coach?

Methodology: Narrative Case Study

Think Aloud (TA) within the context of this study involves the coach verbalising his thoughts and reflecting on his coaching throughout the duration of the coaching session. To explore TA in action, an inductive case study methodology was adopted. This methodology was appropriate because case studies have been noted as an effective means of studying phenomenon in depth (Flyvbjerg, 2006) and exploring the application of theory in complex social contexts (Noor, 2008). In addition, case study methodology provides researchers with flexibility to constitute a case(s) and to utilise methods that are best placed to address the research question(s). Not surprisingly then, case studies have been utilised by coaching researchers who seek to understand coaching from the premise that it

is a relational process situated in dynamic social contexts (e.g. Taylor, Werthner, & Culver, 2014; Mallet & Coulter, 2016). The flexibility, which is inherent to case study methodology, has however been the source of criticism by researchers. For example, researchers have been criticised for failing to clarify and justify methodological processes and for implementing processes that are inconsistent with the methodology espoused (Hyett, Kenny, & Dickson-Swift, 2014). To address such concerns, the following section will clarify the paradigmatic position of the paper, introduce the case, describe the methods used to collect and analyse data, and acknowledge the limitations and ethical issues relevant to the study.

Philosophical Position

The case study herein is situated within an interpretivist paradigm that is in keeping with the seminal work of Stake (1995). From this perspective, case studies are opportunities to interpret and construct meaning from complex and socially situated accounts of experience. Consistent with the interpretivist paradigm, a subjectivist epistemology guided the study. A subjectivist epistemology recognises knowledge as constructed through individual meaning making and social interaction (e.g., researcher and participant working together to make sense). Additionally, a relativist ontology, which posits reality as local, social and therefore multiple, also influenced the methodological decisions undertaken. Thus, from this ontological position, our definition of the case and the analysis that follows is just one possible exploration.

The Case

The participant, Dave, was purposefully sampled. Dave's experience was of interest to the researchers because he is a football (soccer) coach who was keen to develop his coaching practice through TA and to advance his own personal development. Dave is characterised herein as an enthusiastic TA neophyte who was willing to use the protocol in a naturally occurring context. Therefore, Dave was a critical case (Patton, 1990) who was deliberately sampled because of these

characteristics. This case and these characteristics are worthy of study because they provide an opportunity to explore theory in practice and to elucidate the practical dimensions of TA as a coach development tool. More specifically, Dave had read about TA and decided to ‘try it out’ in his coaching sessions.

At the time Dave was a young coach (23 yrs) and was qualified to coach soccer because he possessed the Football Association Level 2 coaching qualification. As a player himself, Dave had spent five years at a Premier League Club academy and represented his county in underage competitions. He also played for his University team for three years. In terms of coaching experiences, Dave had spent seven years coaching in community soccer contexts, including summer camps. He also completed voluntary work with a Premier League Academy and a University team. However, this was his first season with the women’s team and thus he was keen to develop as a coach. Hence his willingness to participate in the present study.

During the season, coaching sessions took place twice a week and involved the team (24 players and 2 assistant coaches). Each weekend the team participated in a national (non-professional) league and was classed as participating at an adult recreational level. In this domain, sport can be competitive but is typically performed by amateurs for a range of motives including but not limited to socialising, health benefits, and fun (Côté, Young, North, & Duffy, 2007). Indeed, in the season prior to Dave assuming the role of head coach, the team in question had previously finished bottom of the league table and yet players continued to attend sessions. This once again reinforces the view that the team participates within an adult recreation domain (Côté, et al., 2007).

As well as being a critical case, Dave was also a convenient sample. While the study took place, Dave was undertaking a post-graduate qualification at the same university as the researchers. Indeed, the researchers had heard of Dave’s intention to use TA through a colleague and approached

Dave directly. This convenient, yet purposeful and critical sample brings both advantages and disadvantages. Specifically, it is not claimed that Dave is a representative sample and thus generalisation from this case should not be made solely on the basis of Dave's characteristics. Rather, it is claimed that the case is a convenient one which is bounded by the individuals involved, the context in which it is set, and the season in which TA was utilised. Nonetheless, Dave's case has the promise to elucidate the impact of TA on his coaching practice and to explore the efficacy of TA as a coach development tool.

Data Collection Procedures

Reflecting the subjectivist epistemology and the flexibility afforded by case study research, data collection incorporated a range of methods in order to elucidate the experience as fully as possible. Each method has its own strengths and weaknesses and by utilising a range of methods, a rich description (including the what, how, and why) of the phenomenon in question was gathered (Manojlovich et al., 2015). Although various methods were used, it is important to note that these were all guided by a subjectivist epistemology with the aim of understanding the use TA as a tool to facilitate reflection-in-action with a women's amateur soccer coach. In doing so, the study avoided the philosophical challenges often associated with mixed methods research (Bishop, 2015). More specifically, the philosophical position influenced data collection via the following methods:

1. A life history interview. This interview utilised procedures recommended by McAdams (1995). These included asking Dave to divide his coaching life into chapters, discussing critical events in each chapter by examining: peak events, nadir events, and turning points; considering positive and negative influences upon Dave; identifying a central narrative; and hypothesising future actions. This interview provided biographical context for the TA experience. This was important because sport coaching is a personal process influenced by individual values, beliefs, and life history (Jones, Armour, & Potrac, 2004). This interview was conducted by the third author and lasted 52 minutes.

2. A transcript of TA data. This data was collected across 4 coaching sessions and amounted to 10.461 words. Data was recorded as part of the TA process and was transcribed verbatim. This data was collected for two reasons: 1) it confirmed that TA had been utilised: and 2) it provided an opportunity to examine the content of Dave's reflections. Thus, this method showed us 'what' Dave thought about (Manojlovich et al., 2015).
3. Dave's week by week ($n = 4$) diary of his experience using TA. This diary was constructed using guidelines by Gibbs (1998). This data was collected because, as others have illustrated (e.g. Casey & Fletcher, 2017), the diaries provided a useful temporal account of situated experience and meaning making. More precisely, the diaries provided a timely account of 'how' Dave experienced TA (Manojlovich et al., 2015). This is consistent with the subjectivist epistemology and the aim to explore whether TA was effective for Dave.
4. An overall narrative account of Dave's TA experience. Dave constructed this as a means of providing a holistic overview of his TA experience. It was a valuable piece of data because in contrast to the weekly diary, the narrative was a final account of all his experience. It was completed individually, contained 937 words, and aligns with both the perspective that coaches can be storytellers (Carless & Douglas, 2011) and the subjectivist epistemology. Moreover, it provided the opportunity for Dave to describe a more complete appraisal of 'how' TA was for him beyond the episodic and temporal diary entries.
5. A second interview was conducted with Dave. The initial section of this interview was descriptive in nature and asked open-ended questions that aimed to situate his TA experience in context (e.g., what does a typical session look like? Who is there? What does it sound like? When did you use TA? How did you use it?) In so doing, a rich descriptive and grounded account of Dave's experiences was gathered. Coaching is acknowledged as a contextually situated activity (Evans, 2017) and thus it was important that we could understand Dave's thoughts in context. The latter part of the interview also provided an opportunity for the researchers to further and more fully explore Dave's diary entries and his narrative account in order to explore 'why' Dave might have had the experiences he did while using TA

(Manojlovich et al., 2015). This interview was conducted by the first researcher and lasted 25 minutes.

Data Analysis

Procedures influenced by Interpretative Phenomenological Analysis (IPA) (Smith & Osborn, 2008) were utilised in order to make sense of the data. This decision is consistent with a focus on Dave's lived experience, the relativist ontology espoused earlier, and an aspiration to understand in depth the idiographic experiences of a purposive, homogenous sample. Other qualitative approaches were available such as Thematic Analysis (Braun & Clarke, 2006), but these were eschewed in order to capitalise on IPA's potential to explore a) the phenomenon in question (TA); and, b) appreciate the idiographic nature of a small sample (Callary, Rathwell, & Young, 2015). IPA is influenced by phenomenology, which is a descriptive philosophical approach that seeks to elucidate the essence of a phenomenon: TA in this study. This philosophy has influenced many strands of phenomenological informed research methods and is relevant to sport research (Kerry & Armour, 2000) and sport coaching research (Cronin & Armour, 2015; Cronin & Armour, 2017). Interpretative phenomenology analysis is one such method and it recognises that phenomenon are subjectively experienced within our given social lifeworld (Smith & Osborn, 2008). Therefore, it was appropriate to use IPA in this study because currently there is a need to describe what TA involves in the context of situated coaching practice and how it is subjectively experienced by a coaching practitioner. Indeed, TA has not been problematized to a point where it is informed or associated with a specific theoretical framework (Welsh, Dewhurst, & Perry, 2018) and thus it is worthy of further description. Additionally, IPA values the interpretative experiences of small samples rather than a larger nomothetic approach (Callary et al., 2015). This idiographic approach was appropriate in this study because TA research is underdeveloped. An in depth case study can provide novel findings that are interesting in their own right, but may also generate future hypothesis (Flyvbjerg, 2006). Thus IPA procedures were both appropriate and adopted, including:

- Looking for themes in the first case through several immersive readings of the texts (diaries, interview transcripts, and narratives).
- Initial notes that summarised meaningful sections of texts were made in the left-hand margin and from the second reading onwards potential themes were identified on the right-hand side. This reflects the interpretivist influence upon the study.
- Themes were then listed on a separate sheet and researcher 3 examined them for connections. This resulted in refinement and identification of subordinate themes.
- As the clustering of themes took place, the connections to the primary transcript were re-examined to ensure fit with the data.
- Following this, a table of superordinate themes was created with clear links to subordinate themes. Once again, the researcher team examined these themes to ensure fit with the data.

Three additional steps were undertaken during the data collection and analysis processes in order to develop a rigorous study. These steps are outlined below to enable readers ‘judge’ the success of these steps (Smith & McGannon, 2017).

First, all researchers completed a positioning statement prior to data collection. This was not a Husserlian attempt at bracketing researcher subjectivity and removing all prior experiences (Husserl, 1913/1982). Rather, in keeping with an IPA (Smith & Osborn, 2008), these positioning statements were generated as a means of identifying inherent positions (Callary et al., 2015). To enable this, Langdridge (2007) argues that researchers should consider personal factors, functional issues related to their role, and preconceptions of the topic under consideration. This advice was useful throughout data analysis, because the positioning statements were revisited as a means of questioning interpretations. For example, the positioning statement highlighted that Researcher 1 approached the study with a positive perception of TA. The positioning statement therefore increased the first researcher’s awareness of her subjectivity, and in response she aimed to code data in a critical fashion.

Second, an audit trail, as described above, was maintained throughout the coding process. This helped the researchers consider if interpretations were plausible and defensible. To enable this, the third author acted as a critical friend during the coding process (Smith & McGannon, 2017). The critical friend raised issues such as a contradiction between a negative holistic narrative and positive early experiences of TA. Third, following data analysis, member reflections also took place. During this process, the researchers and the participant examined the superordinate themes identified. This was not an opportunity to confirm the representation of a valid truth, but to identify and explore any contradictions between Dave's knowledge and that of the researchers. Thus, this step is consistent with the double hermeneutic within IPA (Smith & Osborn, 2008) and the epistemology adopted in the study (Smith & McGannon, 2017). In practice, the participant agreed with the findings during the member reflections and stated "all the themes looked fairly good to me". The participant did however add more detail, which have subsequently been used as data.

Limitations and Ethical Issues

Despite the range of data collected and steps undertaken to develop rigour, it is important to acknowledge the limitations of the study. As mentioned above, the sample was purposive and convenient. Additionally, the findings are not a definitive realist judgement, but a relativist interpretation of Dave's experience that provide insight on TA as a coach development tool. Readers should therefore be cautious when considering generalisation. We invite them to acts as connoisseurs (Sparkes & Smith, 2014) and use their own critical sensitivities and natural attitude (Stake, 1995) to learn lessons from Dave's case.

It is also important to acknowledge ethical issues within the study. For example, although Dave as a participant has been involved throughout the project, a power dynamic exists between the participant and the researchers. This is perhaps complicated further because Dave was a student at the same institution as the researchers. Accordingly, steps such as the use of a critical friend, member reflections, and positioning statements have been made to somewhat mitigate the power between

researchers and participants. In addition, the representation of Dave's TA experiences features some other entities (e.g., players, fellow staff, the soccer club). To represent these individuals and the organisation ethically, pseudonyms have been used throughout the narrative to ensure anonymity.

Data Representation

Findings from the data collection and analysis procedures described above are presented in the following section and Table 1. Specifically, a superordinate theme is introduced of being 'Suspended above, and in-action' which represents the essence of TA for Dave. This theme is introduced, explained and then supported by subordinate themes grounded in Dave's lived experiences. Following the description of the essence and detailing of Dave's experiences through the subordinate themes, a brief theoretical discussion is provided wherein the researchers make sense of the findings. This brief discussion highlights extant theories which are relevant to the findings. This discussion is a useful aid for future research because to date, TA has not been associated with a specific theoretical framework (Welsh et al., 2018).

Results and Discussion

The following results and discussion section will introduce the essence of Think Aloud (TA) for Dave. This essence is explained with a metaphor of being 'Suspended above, and in-action' and examples from Dave's experiences. Subsequent to this, subordinate themes that were also derived from the five data sets outlined within the methodology are presented. These subordinate themes relate to the perceived benefits of using TA (improved self-awareness, pedagogy and communication) and perceived disadvantages (feelings of apprehension and distraction). A brief discussion will be presented to illustrate how each theme contributes to coach education research and to the overall research question of this paper: can TA be used as a tool to facilitate reflection-in-action for a women's amateur soccer coach?

360

361 **Superordinate Theme: ‘Suspended above, and in-action’**

362 The analysis of Dave’s TA experiences led to the identification of an essential superordinate
363 description, characterised by the metaphor; ‘suspended above, and in-action’. The ‘suspended above,
364 and in-action’ metaphor represents how the TA process enabled Dave to adopt a perspective in which
365 he was critically conscious of his *own* coaching practice. More specifically, engaging in TA provided
366 Dave with a meta-cognitive vantage point, which is akin to briefly ‘rising above’ the everyday ‘hustle
367 and bustle’ and narrowly focusing in on his *own* coaching behaviour. This was evidenced within
368 Dave’s TA audio during one of his coaching sessions:

369 I feel like I’m not getting my point across well enough, and maybe I need to change my
370 language, so I’m going to make sure the intensity goes up now and if it doesn’t go up I’m
371 going to try and address them again. (TA session 2).

372

373 Through this meta-cognitive perspective, TA enabled Dave to utilise his critical
374 consciousness and to view his practice as if he was ‘suspended above it’. Thus, the essence of TA for
375 Dave was a feeling of being distanced from the coaching session, but well placed to ‘zoom in’ and
376 analyse his own coaching practice.

377

378 Although Dave experienced TA as ‘suspended above action’, which represents a meta-
379 cognitive stance, he was however still physically immersed in the practical context. Indeed, because
380 Dave was corporeally situated in the coaching session (e.g. on the side-line of a playing field), his
381 critical observations were grounded in the immediate context. This is an important point because it
382 means that Dave was both well placed to critically reflect upon his own action (suspended above
383 action), but also to amend his coaching practice (suspended in-action). For example, in response to
384 his verbalised thoughts above, Dave addressed the players:

Ok, hold it there. Just finish off that one Maddy. Laura run this one into here for me. Ok, fantastic, movement sorted. You're all dropping off to receive the ball I've seen everyone of yous doing it. But what can we improve a little bit more? Say it every single week, communication. Ok, I'm going to drill it into you week on week until we're perfect. You all loved talking about gogglebox and worms over there in the warm up but now let's talk about passing ok? If I'm receiving the ball off Leah. Yes Leah, I really want the ball. I want the ball more than anybody on this pitch so I'm going to scream for it. Yes give me this ball, back foot. Tell the player you're receiving the ball from where you want it to play, off we go. Good Jemma, bit louder though. Yes Emma superb, good. Much better,

Subsequent to this action, Dave then verbalised more of his own thoughts including considering how he felt:

Instantly, I can see an impact on communication, *which makes me feel good*.

Therefore, Dave not only experienced TA as if he was temporally suspended above the action, but he was also present in it. Indeed, Dave metaphorically moved back and forth between an internally focused state of evaluation to implementing externally focused behaviours. This dualism of both evaluating his own experience from a meta-cognitive perspective, while also being immersed in the practice is represented in the essential superordinate description 'suspended above *and* in-action'. This experience did bring both advantages and disadvantages for Dave (see Table 1) and thus these are further discussed in the five subordinate themes that follow:

INSERT TABLE 1 HERE

Subordinate Theme - Perceived benefits of using TA

Within the superordinate theme, a set of subordinate themes were generated relating to both the perceived benefits of using TA and the limitations of using TA. The section below provides evidence of the perceived benefits of using TA, which were increased self-awareness, improved pedagogy and improved communication.

Subordinate theme 1: increased self-awareness

Increased self-awareness refers to Dave's acknowledgment that, through his use of TA, he was able to become more aware of how and why he was thinking what he was thinking, and to think more about his actions while coaching.

Throughout interviews, TA sessions, and reflections, Dave identified how using TA developed his self-awareness:

This process allowed me to discover that in fact the information I was giving the players was inconsistent with what I was thinking aloud. For example, there were times I would stop the session and ask questions to the girls in search of a deliberate answer. Although I did not mention in the think aloud process that I was going to do this. This is probably the main thing I realised from the session. There was a lot of instruction given to the players and it was all short and sharp dialogue, which matched the intensity of the session. However, I think that if I varied my behaviour throughout the session the girls would have had more opportunities to develop. (Reflective Log 1).

Collins and Collins (2012) emphasised that the ability to recognize, in reflection, the interaction of cues, goals, opinions, and situation factors, forms a critical part of the coach's skill. What is evidenced here within Dave's Reflective Log 1 is that he is recognising particular cues and situational factors within his coaching session and as a result, he should vary his behaviour.

I think I am more aware of what I am doing in terms of reflecting. I think I am looking and thinking it has actually improved in practice cos I'm looking and thinking 'well she hasn't done that right but what can I do to improve that?' (TA interview).

Ok so this is making me feel good because they're working hard and scoring goals and it's challenging them with the two touches but I think the intensity has dropped a little but I'm not sure why. (TA session 1).

This finding mirrored that of Whitehead et al. (2016a), as their participants demonstrated that the act of putting on a microphone instantly made them feel more self-aware and created a metacognitive process where they would think about their thinking. In turn, this demonstrated how TA may facilitate the process of reflection. Although dated, Knowles and colleagues (2001) highlighted very clearly that reflection is thought to create a link between the application of professional knowledge and practice by raising intuitive knowledge into consciousness (Saylor, 1990). Related to this, Kemmis (1985) proposed that reflection is:

A dialectical process: it looks inwards at our thoughts and thought processes and outward at the situation in which we find ourselves; when we consider the interaction of the internal and external, our reflection orients us for further thought and action. Reflection is thus 'meta thinking' (thinking about thinking) in which we consider the relationship between our thoughts and action in a particular context. (pp. 141)

Subordinate theme 2: improving pedagogy

Improved pedagogy refers to Dave's acknowledgment of improvements in his grounded coaching practice. This became something that Dave believed he had improved on throughout the TA process:

I also need to consider using a variety of different coaching styles rather than just command, which was apparent in this session. I used question and answering at the beginning but failed to continue this throughout the session. Recognising when to use certain styles will be important moving forward throughout my development. (Reflective Log 4).

Today I'm gonna let them play again, reason I'm gonna do this is because on a Sunday they're gonna have to make their own decisions so I want them to do it here. (TA session 1)

It's given me an understanding of different ways I can educate and approach the players, it is always something I am conscious of as it's something I focus on a lot in other modules throughout my masters, so from start to finish I definitely think my pedagogy improved. (Member reflection)

Perceived improved pedagogy was found to occur throughout Dave's TA experience, in that he questioned his coaching behaviours and content of his coaching sessions. Lawson (1990) postulated that there is no one size fits all pedagogy in the day-to-day lives of coaches, nor their practices. Lyle (2002) and many others (e.g. Cushion et al., 2010) argued that it is important for coaches to learn from experience rather than solely rely on formal coach education. For Dave, TA provided exactly that, in that it allowed him to use his own experience and his own coaching environment as part of his developmental journey.

Subordinate theme 3: improved communication

Being able to articulate what, to whom, and when is a vital part of coaching. This ability to communicate effectively is something that is of interest to many coach educators. Dave demonstrated this within his reflective log, a TA session and during his member reflection:

I think it was because I was concentrating on the right things to say and focusing on relevant information rather than just speaking for the sake of it. (Reflective Log 2).

483 Ok they're not communicating at all. I wanna know why. Is there something I can do to help
484 them communicate or not? (TA session 1).

485 I think the way I can articulate certain things has improved, I think it has helped me
486 constantly think about what I'm doing and how I am going to articulate that to the players.
487 because I say my thoughts out loud, its helped me vary my communication skills a bit more
488 instead on being so command style all the time, its actually helped to think, actually this isn't
489 a good way to coach, can I communicate a little bit differently, I noticed this is one of my
490 players, from start to finish, she shifted in her behaviour (improved) the more I changed or
491 improved my communication style. (Member reflection)

492

493 **Subordinate Themes - Perceived disadvantages of using TA**

494 What is novel about this research is that Dave has also uncovered some key critical
495 considerations when implementing such a tool into a coach's practice. Specifically, Dave experienced
496 feelings of anxiety and worry when he initially set out to use TA. In addition, Dave also felt that, at
497 times, TA acted as a distraction to the actual coaching process.

498

499 **Subordinate Theme 4: apprehension or worry of using TA**

500 At the start of his TA journey, Dave reported feeling anxious about engaging in the process of
501 TA. It appears from data that his worry was related to using TA correctly and learning the process in
502 the correct way. Previous literature using TA has recommended the use of TA training prior to
503 engaging in this process fully (Eccles & Aarsal, 2017; Whitehead et al., 2018). In accordance, Huntley
504 et al. (2014) also emphasised the need for reflective practice to be learnt and that coaches need time to
505 engage in the process. Dave articulated these concerns throughout some of his data:

506 In terms of using the think aloud protocol, I was very worried that I wasn't talking enough
507 into the microphone about what I was seeing. (Reflective Log 1)

508 I felt that using Think Aloud this week made me slightly anxious at times as I was
509 concentrating on what I was going to say rather than providing a great experience for the
510 girls. (Reflective Log 4)

511 The reality of my think aloud session is beginning to set. My heart is racing. I can feel the
512 anxiety taking over my body. I cannot wait to conquer the last session, so I can get back to
513 normal life. (Narrative)

514

515 Eccles and Aarsal (2017) discuss the common pitfalls of using TA and support that TA is not
516 particularly natural, especially in the presence of others. Although warm up exercises from Eccles
517 (2012) and Ericsson and Simon (1993) are recommended, it is important to note that these exercises
518 are not domain specific. Those utilising TA in the future should engage in domain specific training
519 over a longer period of time to ensure that the coach or participant feels comfortable with the process.
520 Furthermore, from a theoretical perspective it is important to consider cognitive information
521 processing which emphasises the need for a learner to learn in their naturalistic environment. This is
522 due to the brain recognising specific patterns of information within their environment, which may not
523 occur outside of this environment (Gibson 1979; Karni & Sagi 1991). This was elegantly shown by
524 De Groot (1978), who asked master and intermediate chess players to reconstruct the locations of
525 chess pieces after viewing the board for only a few seconds. When the pieces were presented in actual
526 game play locations, the masters were considerably better than the intermediates. However, when the
527 pieces were presented randomly, the two groups of players did not differ in their abilities to
528 reconstruct the board. Studies like this reveal how learning and expertise depends on experience with
529 the specific patterns of information and therefore, the specific learning environment. In Dave's
530 situation, this would suggest that TA should be learnt within his own coaching environment and that
531 the skill of using TA itself needs to be practiced in order for Dave to become fully comfortable with
532 it. This was evidenced within his member reflection:

533 It is a really really useful tool and I do feel that it has improved my coaching process but I do
534 want to make people aware and encourage them to consider some of the potential issues of
535 getting used to it in the beginning. (Member reflection)

536

537 **Subordinate Theme 5: TA as a distraction**

538 Dave found that ‘at times’ TA distracted him from being able to observe the whole coaching
539 environment.

540 I pride myself on creating an environment for my players to develop and express themselves,
541 but during these sessions, I am neglecting my players. I am there in person, but mentally, I
542 cannot concentrate on anything they are doing in the sessions. (Narrative)

543 The session progresses and I continue to verbalise, I am not prepared for what was about to
544 arise. This moment will never leave me. I am delivering a crossing and finishing session. It is
545 running smoothly so I decide to take myself off and ‘smell the grass’, as my level two tutor
546 would frequently say. I proceed to think aloud about how I am feeling in the session “the
547 session is running smoothly, the girls appear to be motivated, I think this is because....
548 Yeeeeees! Oh my god Dave did you see that? I can’t believe it; I didn’t know I even had a left
549 foot.’ I am heartbroken. One of the strikers on my team has scored a goal from outside the
550 box with her left foot. She has never scored a goal in training never mind during a game. This
551 is the highlight of her footballing career and I did not see it. I am at the side of the pitch
552 talking into my microphone commenting on what I had just seen moments before this
553 happened. I want the ground to swallow me up. I never want to coach again. I cannot bring
554 myself to tell her the truth so I jump up and down and reply, “Get in Jem! That was
555 unbelievable. I hope Man City are watching. Get her signed up!” The mood among the group
556 is at an all-time high. Nevertheless, I cannot help but feel distraught. (Narrative)

557

From an attentional focus perspective, it is important to consider the potential limiting effects this method may have on the coaching environment. Coaching is a dynamic and complex environment, (Collin & Collins, 2012) and the development of the athlete or team is central to that. Therefore, implementing a tool that has the potential to cause self-internalisation, as evidenced by Dave's report, may have a negative impact on the athlete or team. Specifically, by promoting the use of TA as a reflection-in-action tool, we are running the risk of distracting the coach from his or her usual behaviour. Because Dave is still in the early stages of his coaching career, and he is new to the use of TA, we may be presenting him with an information processing dilemma. Dave now has to focus on both coaching his session, while thinking and reflecting aloud as he coaches.

According to Vealey (2007), attentional focus is the ability to direct and sustain focus and attention is defined as the ability to switch focus from different sources of information (Boutcher, 2008). If a coach is being instructed to direct his or her intention internally to his or her own thought process, this could result in attention being directed away from the athletes. Thus, there is a conflict about what the coach should be attending to and on conflict detection; the executive control system is alerted and performance is slowed (Tedesqui & Glynn, 2013), which could in turn affect coaching ability. This was evident within Dave's narrative (above) where he described how he missed a player's goal due to his focus on exercising TA dialogue. Furthermore, Dave also acknowledged this within his TA interview:

So yeah I might be getting better on reflecting which is brilliant, it's fantastic which is why I wanted to start work on that in the first place but I'm getting worse at coaching cos I'm not actually paying attention to what's going on. (TA interview).

This distraction is an important consideration if Dave intends to adopt this method of reflection in future. He may consider the type of session he uses it in and how it may affect his ability to attend to his coaching environment.

583

584

Making Sense of Dave's Experiences

585

The above themes elucidate Dave's experiences of using TA within his coaching practice.

586

This section will attempt to make sense of these experiences and explain how both the perceived

587

benefits and limitations of using TA may have occurred. Developing self-awareness of one's own

588

strengths and weaknesses is laudable. However, many individuals remain largely unaware of their

589

own biases in their self-evaluation (Pronin, 2008). Furthermore, these biases have been found in a

590

plethora of domains including medical trainees (Gordan, 1991), college students (Lew, Alwis, &

591

Schidt, 2010), and athletes (Felson, 1981). Biases may arise because people do not know how to

592

access the non-conscious psychological processes that influence their emotions and behaviour

593

(Wilson 2002; Wilson & Dunn, 2004). Within coaching, where decision-making processes may need

594

to be quick, this will involve a process where few options are generated and individuals are reliant on

595

heuristics to make fast-paced decisions (Johnson & Raab, 2003). When these decisions are made

596

quickly, there is very little conscious attention to the available options prior to the decision being

597

made. Therefore, if this autonomous process is not examined at different time points self-biases and

598

potential ego inflations may go unchallenged and misaligned. It is important to note however, that we

599

can only make these assumptions about Dave and his experience within his own context.

600

601

As already mentioned within these results, Kemmis (1985) proposes that reflection is

602

concerned with looking inwards at our thoughts and outward at the situation we find ourselves in. In

603

turn, we are thinking about thinking. In the case of Dave, we can see this phenomenon through the use

604

of TA and 'suspending' himself above the coaching environment. This allowed him to break his

605

automatic thinking process and 'zoom in' to look inward at his thought processes from the outside.

606

This in turn may also allow for some of these non-conscious processes to be challenged and made

607

conscious, which can promote a more accurate self-evaluation. Further research is required to explore

608

this.

From a theoretical perspective, the processes of ‘suspending’ the self within the situation using TA is disrupting the natural cognitive process of decision making and coaching during a session. Therefore, this illuminates what Dave has named ‘distraction’ from the task. Masters (1993) proposed that if an individual has an inward focus on attention, within a task, this could lead to the breakdown of the task performance. Masters (1993) names this ‘reinvestment’ and has subsequently produced many empirical papers to support this theory (Masters, Paul, MacMahon, & Eves, 2007; Masters, Poolton, Maxwell, & Raab, 2008). The inward focus of attention acts as distraction to Dave’s previously natural process. However, the process of TA is purposely used to promote an inward focus of attention, which will create a heightened sense of awareness within the coach. Therefore, the theme of ‘distraction’, which is something that was highlighted as a potential barrier to using TA as a reflective practice tool in coaching is potentially pulling the coach away from his session, and drawing his attention inwards. Therefore, this results in some level of disruption of the task of coaching, as evidenced within Dave’s transcript, where he clearly articulates how he started to miss key elements within his coaching environment. This process seems to become a trade-off between Dave becoming internally focussed and potentially reducing his self-bias by making his decision-making process more conscious, and disruption to his grounded practice. The cost of this trade off needs to be something that other coaches may wish to consider when contemplating the use of TA.

Conclusion

Reflective practice has been criticised within the coach education literature as something that is neglected and/or misunderstood (Huntley et al., 2014; Cushion, 2018). The aim of the current study was to apply a novel method of reflection-in-action (Think Aloud) with a women's amateur soccer coach. Furthermore, traditional approaches to reflection have been under scrutiny, therefore, Dixon et al. (2013) called for more innovative approaches to reflection that also emphasise participation. TA was

deemed one such innovative tool to investigate, given that it involves the coach reflecting within the action of his or her own practice. Through a variety of data collection points, this study was able to identify some key benefits of using TA as a reflective tool (e.g. increase self-awareness, improved pedagogy, and improved communication), which are in accordance with the findings from Whitehead et al. (2016a). However, further findings within this study have illuminated some of the potential problems that a coach may face when using this tool (e.g. apprehension and distraction). Although we cannot generalise to all coaches given that the experiences within this study are from one coach and one context, we would encourage coaches and researchers to consider these potential limitations when considering the use of TA within coaching.

Notwithstanding the attentional focus challenges of TA, Dave clearly demonstrated how a TA ‘neophyte’ has been able to adopt such a method in order to facilitate the reflective process. Although we need to be careful not to uncritically generalise these findings, it is important to acknowledge how the process of using TA has enabled Dave to engage in the reflective process, which is specific to him and his coaching context. Previous research has identified that coaches find the process of reflection-in-action difficult (Knowles, Borrie, & Telfer, 2005; Nelson & Cushion, 2006; Cropley et al., 2016). In contrast, what seems evident throughout this study is that Dave was able to engage in the process and perceive the process to be beneficial to his coaching development.

When considering Dave’s experience of TA it is important that we respond to arguments that reflective practice within coaching has been adopted uncritically (Cushion, 2016) Indeed, we fully acknowledge that TA is not a panacea to reflective practice and coach development and more research needs to be conducted into the training and application of TA. We have also tried to respond to the argument that coaches are not only being directed on what to think but also how to think (Cotton, 2001, pp.514) by giving the ownership of the process to Dave and allowing him to explore the use of TA for himself. Furthermore, Jones, Morgan, and Harris (2012) emphasise how coach education

661 courses are fine in theory but are divorced from the gritty realities of practice. Therefore, we feel that
662 developing a bespoke TA programme for coaches, which enables the coach to apply the principles of
663 TA into their everyday coaching is a vital step towards bridging the gap between the theory and the
664 ‘gritty realities of practice’ (Jones et al., 2012). As Dave engaged in the TA process mostly
665 independently, we recommend further research considers the use of TA through a collaborative
666 process (Griffiths et al., 2016) with other coaches who may be experiencing the same issues.
667 Furthermore, such research could utilise the theoretical frameworks suggested herein (e.g., Masters’
668 reinvestment theory) in order to further elucidate TA as a coach education tool.

669
670 Finally, this study has responded to the criticisms within the coach education literature that
671 reflective practice lacks innovative methods that facilitate reflection-in-action and that reflection
672 should occur within the context of the practice (Dixon et al., 2013; Cropley et al., 2016). It has
673 demonstrated that a novel method of reflection-in-action (Think Aloud) has the potential to develop a
674 coach’s self-awareness, which in turn facilitates the development of both pedagogical and
675 communicative skills within his own coaching environment. It has also made a significant
676 contribution by linking Masters et al. (2007) reinvestment theory to TA. We encourage coach
677 educators and researchers to adopt this method critically with an awareness of both the potential
678 benefits and limitations that Dave experienced within his coaching practice.

References

- Banning, M. (2008). A review of clinical decision making: Models and current research. *Journal of Clinical Nursing*, 17, 187-195. DOI: 0.1111/j.1365-2702.2006.01791.x
- Bishop, F. L. (2015). Using mixed methods research designs in health psychology : An illustrated discussion from a pragmatist perspective. *British Journal of Health Psychology*, 20(1), 5-20. doi:10.1111/bjhp.12122
- Boutcher, S. H. (2008). *Attentional processes and sport performance*. In T. S. Horn (Ed.), *Advances in sport psychology* (3rd ed., pp. 325–338). Champaign, IL: Human Kinetics.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi:10.1191/1478088706qp063oa
- Callary, B., Rathwell, S., & Young, B. W. (2015). Insights on the Process of Using Interpretive Phenomenological Analysis in a Sport Coaching Research Project. *The Qualitative Report*, 20(2), 63-75. Retrieved from <https://nsuworks.nova.edu/cgi/viewcontent.cgi?article=2096&context=tqr/>
- Calmeiro, L., and Tenenbaum, G. (2011). Concurrent verbal protocol analysis in sport: illustration of thought process during a golf-putting task. *Journal of Clinical Sport Psychology*, 5, 223–236.
- Carless, D., & Douglas, K. (2011). Stories as Personal Coaching Philosophy. *International Journal of Sports Science & Coaching*, 6(1), 1-12. doi:10.1260/1747-9541.6.1.1
- Casey, A., & Fletcher, T. (2017). Playing the piper: the costs and consequences of academic advancement. *Sport, Education and Society*, 22(1), 105-121. doi:10.1080/13573322.2016.1168795
- Collins, L. & Collins, D. (2012). ‘Conceptualizing the adventure sports coach’. *Journal of Adventure Education and Outdoor Learning*, DOI: 10.1080/14729679.2011.611283.

- Cotton, A. H. (2001). Private thoughts in public spheres: Issues in reflection and reflective practices in nursing. *Journal of Advanced Nursing*, 36(4), 512–519
- Cotton, D., & Gresty, K. (2006). Reflecting on the think-aloud method for evaluating e-learning. *British Journal of Educational Technology*, 37(1), 45-54
- Côté, J., Young, B., North, J., & Duffy, P. (2007). Towards a Definition of Excellence In Sport Coaching. *International Journal of Coaching Science* , 1(1), 3-17.
- Cronin, C., & Armour, K. (2015). Lived experience and community sport coaching: A phenomenological investigation. *Sport, Education and Society*, 20(8), 959-975.
doi:10.1080/13573322.2013.858625
- Cronin, C., & Armour, K. M. (2017). ‘Being’ in the coaching world: New insights on youth performance coaching from an interpretative phenomenological approach. *Sport, Education and Society*, 22(8), 919-931. doi:10.1080/13573322.2015.1108912
- Cropley, B., Miles, A., & Nichols, T. (2015). *Learning to learn: The coach as a reflective practitioner*. In J. Wallace & J. Lambert (Eds.), *Becoming a sports coach* (pp. 11–26). London: Routledge.
- Cropley, B., Miles, A., & Peel, J. (2012). Reflective practice: Value of, issues, and developments within sports coaching. Sports coach UK research project, 1-51
- Cushion, C.J. (2018) Reflection and reflective practice discourses in coaching: a critical analysis, *Sport, Education and Society*, 23:1, 82-94, DOI: 10.1080/13573322.2016.1142961
- Cushion, C. J., Armour, K. M., & Jones, R. L. (2003). Coach education and continuing professional development: Experience and learning to coach. *Quest*, 55(3), 215-230
- de Groot, A. (1978). *Thought and choice and chess*. (The Hague, The Netherlands: Mouton. (Original work published 1946)

- Denison, J., & Avner, Z. (2011). Positive coaching: Ethical practices for athlete development. *Quest*, 63, 209–227.
- Dewey, J. (1933). *How We Think: A Ristatement of the Relation of Reflective Thinking Yo the Educative Process*. DC Heath and Company.
- Dixon, M., Lee, S., & Ghaye, T. (2013). Reflective practices for better sports coaches and coach education: Shifting from a pedagogy of scarcity to abundance in the run-up to Rio 2016. *Reflective Practice*, 14(5), 585-599
- Eccles, D.W., & Arsal, G. (2017). The think aloud method: what is it and how do I use it? *Qualitative Research in Sport, Exercise and Health*, 9(4), 514-531, DOI 10.1080/2159676X.2017.1331501
- Ericsson, K. A. (2007). An expert-performance perspective of research on medical expertise: The study of clinical performance. *Medical education*, 41(12), 1124-1130
- Ericsson, K. A., & Simon, H. A. (1993). *Protocol analysis*. Cambridge, MA: MIT press
- Evans, B. (2016). Sports coaching as action-in-context: using ethnomethodological conversation analysis to understand the coaching process. *Qualitative Research in Sport, Exercise and Health*, 6778(1–22)
- Felson, R. B. (1981). Ambiguity and bias in the self-concept. *Social Psychology Quarterly*, 44, 64–69. doi:10.2307/3033866
- Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, 12(2), 219-245. doi:10.1177/1077800405284363
- Gibbs, G. (1998). *Learning by doing: a guide to teaching and learning methods*. Oxford: Oxford
- Gibson, J. (1979). *The ecological appraoch to vision perception*. Boston: Houghton Mifflin.
- Gilbert, T. (2001). Reflective practice and clinical supervision: Meticulous rituals to the confessional. *Journal of Advanced Nursing*, 36(2), 199–205.

- Gilbert, W. D., & Trudel, P. (2002). Learning to coach through experience: Reflection in model youth sport coaches. *Journal of teaching in physical education*, 21(1), 16-34Polytechnic.
- Gordon, M. J. (1991). A review of the validity and accuracy of self-assessments in health professions training. *Academic Medicine*, 66, 762–769. doi:10.1097/00001888-199112000-00012
- Griffiths, M.A., Armour, K.M., & Cushion, C.J. (2018) ‘Trying to get our message across’: successes and challenges in an evidence-based professional development programme for sport coaches, *Sport, Education and Society*, 23:3, 283-295, DOI: 10.1080/13573322.2016.1182014
- Huntley, E., Cropley, B., Gilbourne, D., Sparkes, A., & Knowles, Z. (2014). Reflecting back and forwards: An evaluation of peer-reviewed reflective practice research in sport. *Reflective practice*, 15(6), 863-876
- Hyett, N., kenny, A., & Dickson-Swift, V. (2014). Methodology or method? A critical review of qualitative case study reports. *International Journal of Qualitative Studies on Health and Well-being*, 9(4), 23606. doi:10.3402/qhw.v9.23606
- Husserl, E. (1913/1982). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy - first book: general introduction to a pure phenomenology*. (F. Kersten, Trans.) The Hague: Nijhoff.
- Jones, R., Armour, K., & Potrac, P. (2004). *Sports Coaching Cultures: From Practice to Theory* (1 ed.). London: Routledge.
- Jones, R. L., & Corsby, C. (2015). A case for coach Garfinkel: Decision making and what we already know. *Quest*, 67, 439–449. Karni, A. & Sagi, D. (1991). Where practice makes perfect in texture discrimination: Evidence for primary visual cortex plasticity. *Proceedings of the National Academy of Science, USA*, 88, 4966-4970.
- Jones, R., Morgan, K., & Harris, K. (2012) Developing coaching pedagogy: seeking a better integration of theory and practice, *Sport, Education and Society*, 17:3, 313-329, DOI: 10.1080/13573322.2011.608936

- Kemmis, S. (1985) Action research and the politics of reflection, in: D. Boud, R. Keogh & D. Walker (Eds) *Reflection: Turning Experience into Learning*. Kogan Page: London.
- Kerry, D. S., & Armour, K. M. (2000). Sport sciences and the promise of phenomenology; philosophy, method and insight. *Quest*, 52(1), 1-17. doi:10.1080/00336297.2000.10491697
- Knowles, Z., Borrie, A., & Telfer, H. (2005). Towards the reflective sports coach: Issues of context, education and application. *Ergonomics*, 48(11-14), 1711-1720
- Knowles, Z., Gilbourne, D., Cropley, B., & Dugdill, L. (2014). *Reflective practice in the sport and exercise sciences: contemporary issues*. Routledge
- Langdridge, D. (2007). *Phenomenological Psychology; Theory, Research and Method* (1 ed.). Essex: Pearson.
- Lawson, H.A. (1990). Sport pedagogy research: From information gathering to useful knowledge. *Journal of Teaching in Physical Education*, 10, 1–21. doi:10.1123/jtpe.10.1.1
- Lew, M. D. N., Alwis, W. A. M., & Schmidt, H. G. (2010). Accuracy of students' self-assessment and their beliefs about its utility. *Assessment & Evaluation in Higher Education*, 35, 135–156. doi:10.1080/02602930802687737
- Lyle, J. (2002). *Sports coaching concepts: A framework for coaches' behaviour*. Psychology Press
- Mallert, C. (2013). Reflective practices in teaching and coaching. Critical Inquiry and Problem Solving in Physical Education: *Working with Students in Schools*, 147
- Mallet, C. J., & Coulter, T. J. (2016). The Anatomy of a Successful Olympic Coach:. *International Sport Coaching Journal*, 3(2), 113-127. doi:10.1123/iscj.2015-0069
- Manojlovich, M., Harrod, M., Holtz, B., Hofer, T., Kuhn, L., & Krein, S. L. (2015). The Use of Multiple Qualitative Methods to Characterize Communication Events Between Physicians and Nurses. *Health Communication*, 39(1), 61-69. doi:10.1080/10410236.2013.835894
- Masters, R.S.W. (1992). Knowledge knerves and know-how: The role of explicit versus implicit

- knowledge in the breakdown of a complex motor skill under pressure. *British Journal of Psychology*, 83, 343-358.
- Masters, R. S. W., Poolton, J. M., Maxwell, J. P., & Raab, M. (2008). Implicit motor learning and complex decision making in time constrained environments. *Journal of Motor Behavior*, 40, 71-79.
- Masters, R. S. W., Pall, H. S., MacMahon, K. M. A., & Eves, F. F. (2007). Duration of Parkinson disease is associated with an increased propensity for 'reinvestment'. *Neurorehabilitation and Neural Repair*, 21, 123-126.
- McAdams, D. P. (1995). *The life story interview*. Evanston, Illinois: Northwestern University.
- Moon, J. A. (2013). *Reflection in learning and professional development: Theory and practice*. Routledge
- Nelson, L. J., & Cushion, C. J. (2006). Reflection in coach education: The case of the national governing body coaching certificate. *The Sport Psychologist*, 20(2), 174-183
- Nelson, L., Cushion, C., & Potrac, P. (2013). Enhancing the provision of coach education: The recommendations of UK coaching practitioners. *Physical Education and Sport Pedagogy*, 18(2), 204-218.
- Nicholls, A. R., & Polman, R. C. (2008). Think aloud: Acute stress and coping strategies during golf performances. *Anxiety Stress Coping*, 21(3), 283-294.
<http://dx.doi.org/10.1080/10615800701609207>.
- Noor, K. B. (2008). Case study: A Strategic Research Methodology. *American Journal of Applied Sciences*, 5(11), 1602-1604. doi:10.3844/ajassp.2008.1602.1604
- Patton, M. (1990). *Qualitative evaluation and research methods*. Los Angeles: Sage.
- Peel, J., Cropley, B., Hanton, S., & Fleming, S. (2013). Learning through reflection: Values, conflicts, and role interactions of a youth sport coach. *Reflective practice*, 14(6), 729-742

- Pronin, E. (2008). How we see ourselves and how we see others. *Science*, 320, 1177–1180.
doi:10.1126/science.1154199
- Saylor, C.R. (1990) Reflection and professional education: art, science and competency. *Nurse Educator*, 15, 8–11.
- Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. Jossey-Bass
- Smith, B., & McGannon, K. R. (2017). Developing rigor in qualitative research: problems and opportunities within sport and exercise psychology. *International Review of Sport and Exercise Psychology*, 1-21. doi:10.1080/1750984X.2017.1317357
- Smith, J. A., & Osborn, M. (2008). Interpretive phenomenological analysis. In J. A. Smith (Ed.), *Qualitative Psychology: A Practical Guide to Research Methods* (2 ed., pp. 53-80). London: Sage.
- Sparkes, A. C., & Smith, B. (2014). *Qualitative Research Methods In Sport, Exercise and Health: From process to product* (1 ed.). Routledge: London.
- Stake, R. E. (1995). *The Art of Case Study Research*. London: Sage.
- Tang, C. (2002, July). Reflective diaries as a means of facilitating and assessing reflection. In *Quality conversations: Proceedings of the 29th HERDSA Annual Conference Perth* (pp. 7-10)
- Taylor, S. L., Werthner, P., & Culver, D. (2014). A Case Study of a Parasport Coach and a Life of Learning. *International Sport Coaching Journal*, 1(3), 127-138. doi:10.1123/iscj.2013-0005
- Tedesqui, R.A., & Glynn, B. (2013). “Focus on What?”: Applying Research Findings on Attentional Focus for Elite-Level Soccer Coaching. *Journal of Sport Psychology in Action*, 4, 122-123.
- Vealey, R. S. (2007). *Mental skills training in sport*. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 287–309). Hoboken, NJ: John Wiley.

- Welsh, J. C., Dewhurst, S. A., & Perry, J. L. (2018). Thinking Aloud: An exploration of cognitions in professional snooker. *Psychology of Sport and Exercise*, 36(1), 197-208.
doi:10.1016/j.psychsport.2018.03.003
- Whitehead, A. E., Cropley, B., Miles, A., Huntley, T., Quayle, L., & Knowles, Z. (2016a). 'Think Aloud': Towards a framework to facilitate reflective practice amongst rugby 776 league coaches. *International Sport Coaching Journal*, 3, 269 – 286.
- Whitehead, A. E., Jones, H. S., Williams, E. L., Dowling, C., Morley, D., Taylor, J., & Polman, R. C. (2017). Changes in cognition over a 16.1 km cycling time trial using a think aloud protocol: Preliminary evidence. *International Journal of Sport and Exercise Psychology*, 1–9.
- Whitehead, A. E., Jones, H. S., Williams, E. L., Rowley, C., Quayle, L., Marchant, D., & Polman, R. C. (2018). Investigating the relationship between cognitions, pacing strategies and performance in 16.1 km cycling time trials using a think aloud protocol. *Psychology of Sport & Exercise*, 34, 95 – 109.
- Whitehead, A. E., Taylor, J. A., & Polman, R. C. J. (2015). Examination of the suitability of collecting in event cognitive processes using think aloud protocol in golf. *Frontiers in Psychology*, 6, 1–12.
- Whitehead, A. E., Taylor, J. A., & Polman, R. C. J. (2016b). Evidence for skill level differences in the thought processes of golfers during high and low pressure situations. *Frontiers in Psychology*, 6, 1-12.
- Wilson, T. D. (2002). *Strangers to ourselves: Discovering the adaptive unconscious*. Cambridge, MA: Harvard University Press.
- Wilson, T. D., & Dunn, E. W. (2004). Self-knowledge: Its limits, value, and potential for improvement. *Annual Review of Psychology*, 55, 493–518. doi:0.1146/annurev.psych.55.090902.141954

Table 1. Superordinate and subordinate themes associated with Dave’s experiences of using Think Aloud as a reflection-in-action tool.

Superordinate Essence of Think Aloud	
Suspended above, and in Action	
Benefits of Being Suspended above, and in Action	Disadvantages of Being Suspended above, and in Action
Subordinate Themes	
Increased Self-Awareness	Apprehension
Improved Pedagogy	Distraction
Improved Communication	