

Reflective Practice - Helping Coaches Improve their Coaching

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ABSTRACT

Reflective practice has recently been advocated as an approach for sports and strength and conditioning coaches to question, learn from, and understand their own experiences to adapt and/or change their subsequent behaviors and decision-making processes. This article discusses the importance of reflective practice for coaches and provides examples of how reflective practice can be implemented at each step of the coaching process.

Keywords: self-reflection, coach development, sports coaching, strength and conditioning.

INTRODUCTION

Nowadays, sports coaches and strength & conditioning (S&C) coaches have access to data of all sorts for to evaluate athletes, to track these athletes' improvements in training and competition, and to support their decision-making process. The availability and use of such varied sources of data thus becomes a key consideration in supporting coach effectiveness and coach learning.

Recently, many authors have advocated for the use of reflective practice in helping both sports coaches and S&C coaches to become experts in their field (9, 21, 24, 35). Reflective practice is a purposeful and complex approach by which practitioners can explore and question their decisions and experiences within the context of their own practice (34). The use of reflective practice is well documented for personal and professional development in fields such as nursing, psychology, and education for

example (2, 25, 28). In the field of sports, when combined with critical thinking and critical inquiry, various sources of data or 'training information' (31) are available to coaches and can provide them with the opportunity to engage in reflective practice to develop their capacity to question, learn from, and understand their own experiences in order to adapt and/or change their subsequent behaviors (32).

The aim of this article is to discuss the importance of reflective practice for coaches and provide examples of how they can implement reflective practice during the different stages of the coaching process to better understand and improve the performance of athletes or teams, as well as their own.

HOW DO COACHES LEARN TO COACH AND HOW CAN REFLECTIVE PRACTICE SUPPORT LEARNING?

The coaching process is dynamic and often chaotic and is characterized by complexity (4). To navigate this process effectively, coaches need to possess different forms of knowledge, namely (a) *professional*, (b) *interpersonal*, and (c) *intrapersonal* (9). Professional knowledge, which refers to the knowledge a coach possesses of his/her sport and how to apply this knowledge (22), certainly provides the foundation for 'what to coach' while interpersonal knowledge ensures coaches experience effective individual and group interactions, but they alone are insufficient to become an effective coach. Possessing intrapersonal knowledge, which refers to self-awareness and introspection (22), supports coach learning by creating a vast network of ideas, emotions, and experiences resulting in a cognitive

structure that moves beyond simply accumulating more or new knowledge (51).

To transform experiences and conceptions into learning, Knowles and colleagues (29) suggest that reflective practice can help coaches make sense of and develop their knowledge-in-action to improve their practice and the situation in which it occurs. In fact, Gallimore, Gilbert, & Nater (16) suggest that for training to be meaningful and for coaches to develop both as professionals and as individuals, they should continually reflect, adapt and innovate. Additionally, Knowles and colleagues (32) suggest that « *it is the capacity of coaches to practice, reflect and then learn from their experience that is central to developing coaching effectiveness* » (p.1712).

To learn from experience, it is pertinent to look at the work of Schön (47). Schön describes how a practitioner develops knowledge through a reflective process or cycle that is initiated by a reflective conversation that includes (a) identifying a problematic situation, (b) generating a strategy, (c) experimenting with that strategy and (d) evaluating its impact on the problematic situation (18, 24, 47). With reflective practice, coaches can use three types of reflection about their coaching: (a) *technical*, (b) *practical* and (c) *critical* (38). A *technical* reflection aims to reach a specific training or performance goal such as a coach adopting a particular single-leg resistance training exercise for a given athlete over a double-leg exercise after witnessing positive transfer of training from the weight room to the track. A *practical* reflection aims to connect theory and practice and could be done when evaluating if the implementation eccentric training as a part of a training program had positive effects on the jump performance of athletes. Lastly, a *critical* reflection challenges the social, cultural and/or ideological dimensions of a coach's practice such as when faced with a situation that challenged a coach's moral values.

Like coaching, reflective practice is also interpreted as a process that is largely used in educational fields to support learning from one's experience. Sports coaches and S&C coaches often work with numerous athletes on a daily basis and each unique interaction (planned/unplanned or positive/negative) offers the possibility for coaches to reflect and consider possible solutions, adjustments, or improvements if a similar situation were to happen in the future.

REFLECTIVE PRACTICE DURING THE COACHING PROCESS

The coaching process is defined by Cross & Lyle (11) as "the purposeful improvement of competition performance, achieved through a planned programme of preparation and competition" (p.8) and four main steps are usually included in this process: (a) planning, (b) intervention, (c) assessment, and (d) adjustment. Interestingly for coaches, reflective practice can be integrated at different time points of the coaching process. Of interest for coaches on a more regular basis, Schön (47) considered *reflection-in-action* as a matter of thinking-on-your-feet or in the heat of the moment while *reflection-on-action* entails looking back after an event to make sense of your practice to improve future action (34). The third type of reflection, *retrospective reflection-on-action*, is defined by Gilbert (20) as « closing a performance gap » (p.307-308) and could help put into words tacit, difficult-to-articulate knowledge, solve a context-specific problem or evaluate which factor(s) can explain why a given session was poorly performed.

Planning the coaching process

As soon as a competitive season ends, most coaches will take time during the transition phase to look back at the successes and challenges, but many are eager to start planning for the next macrocycle of training and competition.

During the first step of planning, coaches can rely on their extensive professional knowledge to plan and design quality training sessions to guide the athletes towards optimal performance in competition (9, 49). Coaches will thus rationally, systematically, and sequentially select and manage various training tasks and loads based on pre-established performance objectives and navigate the dynamic and constant change associated with the reality of sport (44, 46).

However, it is also important that coaches take the opportunity to reflect and question past decisions and experiences from the previous season. With more data now being accessible to coaches, they can assess the overall performance of the teams and individual players according to different in-game statistics or key indicators of physical performance. As an example, the number of offensive plays over 20 yards conceded from a defensive standpoint over the course of a season can be used by the defensive coordinator to reflect on his/her play-

calling at different moments during games. From a S&C perspective, the players' physical performance can be reviewed at the end of the season and compared with the performance model put in place by the coaching staff to review and possibly adapt aspects of the training program ahead of the next competitive season. For example, if the performance model of a soccer coach emphasizes speed and fast breaks when regaining possession of the ball but players lack sprinting speed over short and longer distances, the S&C coach might want to address this component of the performance puzzle so that the physical and technical-tactical components are aligned. Such scenarios, categorized as *retrospective reflections-on-action*, allow the analysis, synthesis, and evaluation of different sources of information post-performance when these reflections can no longer affect the outcome of a game. These types of reflections can prompt coaches to adapt and change their approach in subsequent actions or events.

The coach thus acts as an active agent in the reflective analysis of his/her practice, but it should be noted that the planning step can be part of what Altet (1) calls an "accompanied process". This "accompanied process" has an objective aspect since it requires the involvement of a trainer such as a coach mentor (27) or a 'personal learning coach'(43) who will act as a guide in the coach's reflective analysis by allowing him/her to distance him/herself from his/her practice. This trainer, by taking an objective look at the different sources of information post-performance, will question the coach on various aspects of his/her practice (expectations, objectives, motivations, decisions, etc.) in order to get him/her to reflect and to analyze on his/her practice so that he/her can take appropriate future steps.

Intervention and assessment during the coaching process

In order to guide and support the dynamic, complex and often chaotic coaching process (4, 29) during these second (intervention) and third (assessment) steps, Kiely (31) suggests that coaches can rely on (a) their coaching opinion and perspectives, (b) the regular analysis of trends in data that they collated and (c) habitual objective and subjective monitoring of training to facilitate their decision-making and guide the training in the right direction.

To collect the necessary data during these two steps of the coaching process, a variety of techniques and tools are now widely available. Three main

approaches are proposed in the literature: (a) the real-time, direct observation approach, which would include global positioning system and accelerometry data or manually recording different game-related statistics, (b) the physiological approach (various heart rate metrics, blood lactate, and maximal oxygen uptake) and (c) the subjective approach (perception of effort, session-ratings of perceived exertion (RPE), training logs; 3, 42). Neuromuscular assessments such as jump testing can be added to these previous approaches (8). By combining these different approaches, coaches are then equipped with the ability to collect valuable data from which they can extract or generate information based on their own interpretation, or with the help of a sports scientist, in order to improve sporting performance or even the quality of their coaching intervention (37).

As a first example, recent technological advancements have allowed velocity-based training (VBT) to become more widely accessible to S&C coaches to (a) estimate the 1 repetition maximum of specific lifts, (b) monitor daily training in terms of volume and relative intensity of the training session, (c) increase motivation and competitiveness through the provision of real-time velocity feedback to athletes and (d) implement velocity loss thresholds to mitigate divergency between fatigue and desired neuromuscular adaptations (50). For a given resistance training session, a S&C coach can prescribe an external load during a squatting exercise for an athlete to perform. By using VBT, the S&C coach can get immediate feedback about this athlete's performance. This information can be used to adjust the external load based on a targeted training velocity (eg. using a mean velocity of 0.75-1.0 m/s to maximize speed-strength for American football linemen (39)) for the next set (*technical, reflection-in-action*). The data can be reviewed post-session to help with the programming of a subsequent session so that the external loads used can target the development of specific physical qualities such as maximum strength or power for example (*reflection-on-action*).

A second example could be the monitoring of training loads over consecutive years of training and competition using objective methods like heart rate monitoring or subjective methods like the session-RPE method. Monitoring of training loads can be examined and discussed by coaches as part of their yearly training plan to identify periods when training loads were (a) too low, (b) in the 'sweet spot' or (c) too high (15) as well as the context in

which workloads were planned and later handled by athletes (*retrospective reflections-on-action*). In addition, this ‘best practice’ could be examined as part of a critical reflection by the coaching staff when evaluating their approach to training at different times of the year (eg. increase training loads to improve physical fitness or reduce training loads to alleviate fatigue; 6).

Adjusting the coaching process – more than making data actionable

As suggested in the previous section, collecting and accessing various sources of data or ‘training information’ (31) is essential. Statistics, video analysis and discussions with peers can also enable the coach to take a step back and evaluate an event (21). Yet, an important question for the coach remains: « How do you implement reflective practice on a daily, weekly, monthly or yearly basis? ».

Reflective practice requires a certain degree of introspection from the coach and should be a daily activity (36). The coach could therefore use a reflective journal, reflective cards, video, shared reflections, or an oral approach such as ‘Thinking Aloud’ to implement reflective practice. Writing down his/her actions and thoughts following an event or a day’s work into a journal or logbook can often serve as a useful introduction to reflective practice. With time being an obstacle to implementing reflective practice, reflective cards (17, 20, 26) containing a few questions related to training or competition such as contextual variables (opponent, score, home/away, weather, etc.), key competitive indicators related to game performance and weaknesses that should be addressed can be a valuable start. Figure 1 provides an example of a reflective card that was used with Canadian university football coaches to collect *retrospective reflections-on-action* in order to contextualize the ‘planning’ step of the coaching process for the next week of training (45).

POSTCOMPETITION REFLECTION CARD
Adapted from Gilbert (2017)

Fill out and return this reflection card to the student responsible for this study by email within 24 hours following the conclusion of the game

- Pre-season game:
- Regular season game:
- Play-off game :

Opponent: _____ Location : _____ Date : _____
 Home/Away
 Result : _____
 Win/Loss / Tie Home : _____ Opponent: _____

Performance indicators for the offense	Did not meet target				Exceeded target
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

Reflections following match:

Reference: Gilbert, W. (2017). *Coaching Better Every Season: A Year-Round System for Athlete Development and Program Success*. Windsor, Ontario : Human Kinetics.

Figure 1. Adapted post-game reflective card using sport-specific performance indicators

POST-TRAINING REFLECTION CARD #1
 Adapted from Cropley, Miles, & Peel (2012), Gilbert (2017), Gilbert & Trudel (2013) and Hughes, Lee, & Chesterfield (2009)

Directives: Fill out after each training and insert into the binder that is provided

Date of training session : _____ Theme of the training session: _____ Theme of the week (Develop, Maintain or Recover): _____

Planned difficulty of the session (0-10): _____ Other : _____ Other : _____

Description of the training session (# of athletes, major and minor emphasis of the session, location, time of session, etc.)	
Training load management How recovered were the athletes from the previous training session? (5 = fully recovered, 1 = did not recover at all): How difficult did the athletes find the training session from 0-10 ? (average RPE for the group): How difficult was the training session? (duration x average RPE):	
What was good about this training session? (Evaluation)	What was bad about this training session? (Evaluation)
What analysis do you make of this training session? Why did the training session go this way? (Analysis)	
What have you learnt from this training session? What can you improve or address in the next training session? (Action plan)	

Figure 2. Adapted post-training reflective card for a coach in sprint kayaking

Figure 2 is an example of a reflective card that was used with a young sprint kayaking coach who was also responsible for implementing the S&C programs for a group of young athletes. Generic information about the objectives of the training session (training theme, planned difficulty, aim of the training week, training location, etc.), how athletes had recovered from previous training was first recorded. After the conclusion of the session, the coach could evaluate the training session from (a) a training load management perspective and/or (b) a pedagogical perspective as well as provide a brief analysis of the session before recording what had been learned and what could be improved for subsequent sessions. This reflective card was kept in a binder that the coach could review in the future as part of summative reflection.

Another option regarding reflective cards could be to answer five questions such as: (a) briefly describe the training session, (b) evaluate what went well, (c) what went not so well, (d) why the session did/did not go well and (e) what I can do to improve for the next training session.

Recent studies have questioned this approach (12) especially with taking the time to sit down, pause, and reflect (33). Moreover, at first, the entries in a coach’s reflective journal might look more like descriptions

of the various events that occurred over the course of the day rather than a reflection-on those events. Consequently, with easy access to technology, other tools such as video (7, 18) can be used to assist coaches in implementing reflective practice. Video provides a major advantage over written forms of reflective practice because it reduces the emphasis on memory while allowing for a greater range of coaching behaviors to be analyzed as a form of *reflection-on-action* (7). As reported by Kidman (30), videotaping oneself while conducting a training session has gained in popularity in coach education settings as a means to self-train and she even provides an example of how former New-Zealand All Blacks coach Wayne Smith used video to not only validate the drills they were performing in practice but also to check their way of communicating with the players. In addition, Kidman (30) offers coaches a sample of questions as a starting point for their (a) self-analysis, (b) athlete-centered approach, (c) use of Teaching Games for Understanding (TGfU) methodology, and (d) questioning. Examples of those questions are presented in the table below.

Table 1. Sample questions from Kidman (30) using video analysis

<p>Sample questions for Self-analysis</p> <ul style="list-style-type: none"> • What effects did your coaching have on the athletes? Discuss benefits and barriers. • Do you think you can solve any identified coaching difficulties by yourself?
<p>Sample questions for reflecting on a coach’s Athlete-centered approach</p> <ul style="list-style-type: none"> • How was the session designed to empower athletes? Analyze your planned questions. • Analyze your line of questioning. Did it encourage athletes’ learning? Were the questions clear?
<p>Sample questions for reflecting on a coach’s use of TGfU</p> <ul style="list-style-type: none"> • Analyze the purposefulness of the games. • Analyze the enjoyment and motivation of the athletes participating in this session.
<p>Sample questions for reflecting on a coach’s use of questions</p> <ul style="list-style-type: none"> • How clear and coherent were the questions that you asked the athletes? • When asking the questions, did you have the attention of all the athletes?

Recently, a collaborative, oral approach to reflective practice has been suggested to facilitate reflective practice amongst coaches (52). Work by Ericsson & Simon (14) and Epler and co-workers (13) on pre-service teachers showed that collaborative reflection and reflection using ‘think-aloud’ protocols promoted deeper reflection and understanding compared to written reflection, Whitehead et al. (52) designed and implemented a novel ‘Thinking Aloud’ protocol to facilitate the in-action reflections of six rugby league coaches from the same club. Using a professional practice intervention during which coaches were asked to verbalize their thoughts using microphone during two coaching sessions, a social validation approach and follow-up interviews showed that the coaches’ in-action verbalizations shifted from descriptive verbalizations to a deeper level of reflection as well as increased awareness, enhanced communication, and pedagogical development. This method, which shares some principles with Schön’s *reflection-in-action*, could then « allow coaches to *reflect-on* their in-event reflections » when reviewing the recordings (52). In-event data can therefore be collected by coaches ‘live’ during a training session by (a) putting into words their inner speech, (b) encoding and vocalizing any visual or movement stimuli they might observe or (c) explain their thoughts, ideas, hypotheses, or motives regarding a specific training task.

Overall, reflective practice appears to be beneficial in both professional and personal development in fields such as teachers’ education and is now being promoted to sport and S&C coaches. It seems though that such practice, as suggested earlier, would be better supported by a trainer such as a coach educator, coach mentor or ‘personal learning coach’. Engaging in reflective practice is a long-term endeavor that requires more than the

pooling of different reflective tools (34). It is also more than the simple description of events that took place during training or competition. During the initial step (planning) of the coaching process, this trainer could provide the coach the structure and guidance required to pause, take a step back and reflect about his/her practice (2) while also maintaining motivation, which can be a barrier to sustained engagement. A good example of this support was provided by Gallimore et al. (16) in which a struggling high school basketball coach implemented reflective practice after meeting and communicating over several years with legendary basketball coach John Wooden. During the latter steps (assessment and adjustment) of the coaching process, this trainer could support higher order learning through the development of skills such as critical thinking, critical inquiry, and problem solving (27). While this article provided different suggestions as to how to implement reflective practice at different stages of the coaching process, the best ways to do so remain influenced by factors such as (a) the coach’s motivation to engage in reflective practice, (b) the coach’s stage of learning, (c) the time and resources available, (d) having access to peers, or (e) working in an environment that values personal and professional development, to name a few (5, 19, 41).

CONCLUSION

Reflective practice has been widely used in the field of education during the past ten years (23, 40, 48). The benefits are multidimensional and permit improvements of educational practice by forcing practitioners to pause and thoughtfully consider the positive and negative aspects of their interventions and behaviours. When applied to

sport coaches (see Côté, Young, North, & Duffy (10) and Jones (29)), they too could benefit from the implementation of reflective practice sessions in their daily interventions. Reflective practice can be incorporated at different steps of the coaching process (planning, intervention, assessment, and adjustment phase) and during or following a coaching event (*reflection-in-action, reflection-on-action, retrospective reflection-in-action, or critical reflection*). In addition, it can serve different objectives (*technical, practical, or critical*) and can use different mediums (journal, reflective cards, video, audio recording). Implementing reflective practice to improve coaches' knowledge and coaching qualities can be impactful not only on their personal and professional development but also for the athletes they work with. In this way, the coach-athlete-performance relationship would likely benefit from taking some time to reflect.

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