Scientific Research Publishing

Open Journal of Social Sciences, 2020, 8, 457-509
https://www.scirp.org/journal/jss
ISSN Online: 2327-5960
ISSN Print: 2327-5952

Considerations and Suggestions for Design of a Learning and Development Program for Sport Coaches

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How to cite this paper: Perkins, P., & Hahn, A. (2020). Considerations and Suggestions for Design of a Learning and Development Program for Sport Coaches. *Open Journal of Social Sciences, 8,* 457-509.
https://doi.org/10.4236/jss.2020.812036

Received: November 18, 2020
Accepted: December 28, 2020
Published: December 31, 2020

Abstract

Coaches play a highly influential role across the whole spectrum of sport. Their proficiency is crucial to the progression, welfare and even the personal development of the athletes under their charge. Maximising the development of that proficiency is therefore a crucial concern of numerous sporting and community organisations. Effort must be directed to continuous improvement of learning and development programs for coaches, with consideration given to the differing requirements of coaches operating in different contexts. Historically, most coach education initiatives have entailed formal instruction in "classroom" situations, but feedback from participants suggests that this is sub-optimal. Better outcomes might be achieved through methods designed to promote informal learning within real-world coaching environments. There is evidence that experiential learning resulting from repeated cycles of action and reflection can contribute substantially to the development of expertise. Observation and imitation of significant others is also a powerful learning mechanism. Here, we review and summarise literature relating to these matters, while also addressing topics such as the nature of coaching, the characteristics of expert coaches, and the ways in which coaches currently learn. We touch upon the concepts of situated learning, cognitive apprenticeship, and mentoring, and identify known barriers and facilitators to adult learning. We then provide a suggested framework for the practical design, implementation, evaluation, and continual refinement of a program emphasising informal but guided nurturing of coach learning and development. The

suggested approach is consistent with classical learning theories and incorporates the establishment of critical friendships and communities of practice.

Keywords

Coach Development, Communities of Practice, Critical Friendship, Informal Learning, Reflective Practice, Situated Learning, Sport Development, Vygotsky

1. Introduction

Involvement with sport occurs for various reasons that can be broadly categorised as follows:

- **Participation for Personal Wellbeing:** Participants take part in sport for personal wellbeing reasons including the social and health benefits associated with participation.
- **Personally Referenced Excellence:** Participants gain enjoyment from skill development and the challenge of surpassing their previous performances.
- **Elite Referenced Excellence:** Participants engage with sport for the purpose of winning at the highest possible level and generally measure success by win/loss ratios (Bailey, Collins, Ford, Macnamara, Toms, & Pearce, 2010).

A key requirement for sustained success and the realisation of positive outcomes across each of these categories is exposure to highly effective coaching (Lyle, 2002; Cassidy, Jones, & Potrac, 2004; Cushion, Nelson, Armour, Lyle, Jones, Sandford, & O'Callaghan, 2010). For example, it is now widely accepted that effective coaches play a critical role in promoting the physical and social benefits of sport participation (Casey, Eime, Harvey, Sawyer, Craike, Symons, & Payne, 2017), enhancing the performance of individual athletes and teams (Becker, 2009), and assisting the positive growth and development of young people through the provision of transformative sporting experiences (Gilbert & Trudel, 2004; Perkins & Hahn, 2020). Given the importance of the role, the recruitment, training and ongoing development of coaches across the entire sport spectrum (i.e., community/recreational, developmental, and high-performance) is a key priority for most sporting organisations (Schempp, McCullick, & Mason, 2006). Historically, many coach development programs have involved providing coaches with instruction in classroom settings, but the effectiveness of this approach has been questioned (Cushion, Armour, & Jones, 2006; Stoszkowski & Collins, 2014; Maclean & Lorimer, 2016). It has been argued that for most occupations know-how is acquired largely through on-the-job experience and observation of others in the work environment, with the contribution of formal coursework being comparatively small.

In the 1980s, surveys of leading executives from six major corporations showed that the executives believed that ~70% of the skills needed for successful performance of their roles had been acquired through having to deal with chal-

lenging work situations, while ~20% was derived from relationships and interactions with others in the workplace. Only ~10% of the relevant skill development was ascribed to formal training (McCall, Lombardo, & Morrison, 1988). In a later study conducted by Gleeson (1992), 115 child welfare caseworkers subjectively assessed the contribution of six learning modes to acquisition of their required job skills. Overall, they gave the highest mean ranking to life experience, followed in order by supervision on the job, self-directed learning, agency-sponsored in-service training, formal degree education and professional continuing education provided outside of their agency. The ranking of formal degree education was influenced by the level of qualification obtained, being higher for caseworkers with postgraduate degrees than for those with basic degrees, but it declined as a function of years of experience in the field. Enos, Kehrhahn, & Bell (2003) asked 84 managers from a Fortune 100 company how they had learnt each of 20 previously identified core managerial skills. For 16 of the skills, more than 70% of the managers perceived that they had learnt primarily through informal activities. There were only seven skills that more than 20% of the managers thought they had learnt primarily through formal training, and there was no skill for which a majority of the managers considered formal training to be the predominant learning mechanism.

The contention that much valuable learning occurs in the work environment can be supported by reference to classical learning theories. For example, the social development theory of the Russian psychologist Lev Vygotsky postulates that learning occurs through relevant social interaction with more knowledgeable others in a "zone of proximal development" incorporating competencies that the learner cannot initially demonstrate alone but can achieve with assistance (Tudge & Winterhoff, 1993). The sociocultural and political context in which the interaction takes place is seen as integral to the learning outcomes, with learning prerequisite to development (Tudge & Winterhoff, 1993). The implication of the theory is that teachers should aim to create learning contexts in which they actively collaborate with students to construct meaning. Learning therefore becomes a reciprocal experience for learner and teacher, rather than a unidirectional process. The learning is best situated within the dynamic interaction of everyday living and work (Lave & Wenger, 1991; Moll, 1990) and provides the mechanisms through which new knowledge, skills and behaviours are acquired (Jarvis, 2004).

Bandura (1986) argued that learning occurs primarily through observation and imitation of models in social settings. It seems reasonable to suggest that people serving as models of effective occupational behaviours and skills are most likely to be encountered within the occupational settings. The bioecological theory of human development conceived by Bronfenbrenner and colleagues emphasises that most learning occurs through personal, complex and reciprocal interactions that occur between an individual and the people, objects and symbols in their immediate surroundings on a regular basis over extended periods of time (Tudge, Mokrova, Hatfield, & Karnik, 2009).

Perhaps stemming partly from the above considerations, a popular notion has arisen within the human resource development sector that about 70% of activities designed to build occupational competencies should be focused on experiential learning derived from dealing with challenging workplace problems, with 20% focused on social learning (via managerial support, peer support and mentoring) and 10% on formal learning through classroom instruction. Although Clardy (2018) has pointed to weaknesses in the underpinning research and its interpretation, and contends that a blanket 70:20:10 framework is unlikely to be universally applicable to all professions, the framework has been quite widely promoted, and has been adopted by various Commonwealth and State Government agencies in Australia (Johnson, Blackman, & Buick, 2018).

A question arises as to whether use of the 70:20:10 framework, or some variation of it that still directs substantial attention to experiential and social learning, could augment the professional development of coaches. To successfully address this question, it is first necessary to understand the nature of the coaching role.

2. What Is Coaching?

It is evident from the literature that effective sport coaching is a complex, challenging and multi-faceted task that requires a variety of skills and involves many responsibilities (Lyle, 2002; Cushion, 2007; Mallett, 2007). It can be thought of as both a socially constructed activity bound by goal-oriented practice (Côté, Young, North, & Duffy, 2007; Cushion et al., 2010; Nelson, 2010) and a pedagogical endeavour aimed at bringing about desired changes (Potrac, Brewer, Jones, Armour, & Hoff, 2000; Cushion et al., 2006). In an attempt to provide greater operational clarity, Lyle (2002) argues that coaching is a process-driven undertaking focused on achieving context-specific outcomes and is based on two separate but equally valuable modes of operation: sports participation coaching (**Figure 1**) and sports performance coaching (**Figure 2**). Lyle (2002) stresses that this distinction is not meant to imply that participation coaching is in any way inferior or less worthy than performance coaching. Rather (as can be seen from the examples below), it is intended to demonstrate the different needs, demands, aspirations, responsibilities, expectations, and accountabilities associated with the different categories of coaching.

2.1. Sport Participation Coaching

This form of coaching usually takes place in settings where it would be inappropriate for coaches to treat competition and winning as the prime objectives. Instead, the aim of a participation coach is to provide opportunities for community-based athletes (children, adolescents and adults) to have fun, learn new skills, develop confidence, interact with friends and compete socially (Lyle, 2002; Nelson, 2010; Perkins, Hahn, Keegan, & Collis, 2014).

2.1.1. Coaching Children with a Sport Participation Focus

The primary aim of a participation coach working with children (aged 6 - 12 yrs)

Figure 1. An example of participation coaching. Because athletes at this level are not intensively engaged with sport and are largely motivated by reasons associated with personal wellbeing (Côté & Gilbert, 2009), a key requirement for participation-focused coaches is to create positive and rewarding experiences that promote the social and physical benefits of sport and encourage those who are inactive to become more active.

Figure 2. Dr Alcides Sagarra Carón, Cuban Boxing Team Head Coach 1964-2001 and arguably one of the world's most effective sport performance coaches. In addition to coaching 32 Olympic Gold medallists and 63 Senior World Champions over the course of his career, Dr Sagarra is also credited with developing the highly successful Cuban amateur boxing system (Dunccan, 2000).

is to assist the development of essential physical literacy skills and create a passion for long-term participation by promoting the social benefits of sport (Jones

& Wallace, 2005; Côté, Horton, MacDonald, & Wilkes, 2009; Cushion et al., 2010).

2.1.2. Coaching Adolescents with a Sport Participation Focus

When working with teenagers who take part in sport for personal and social wellbeing reasons, participation coaches are primarily concerned with developing fitness and health-related outcomes through the provision of welcoming, encouraging and positive training environments and the use of holistic approaches to athletic and personal development (Lyle, 2002; Côté et al., 2009; Perkins & Hahn, 2019).

2.1.3. Coaching Adults with a Sport Participation Focus

Considering that the majority of adult sport participants are motivated by a quest for improved health and fitness, having fun and gaining social benefits (Australian Sport Commission, 2016), participation coaches need to concentrate on implementing safe, fun, inclusive and highly engaging community-focused programs that not only provide participants with a sense of belonging but also promote opportunities for the development of strong social networks and meaningful friendships (Lyle, 2002; Côté & Gilbert, 2009; Perkins & Hahn, 2019).

2.2. Sports Performance Coaching

This category of coaching is largely focused on preparing athletes for competition. The role entails designing and implementing highly structured yearly training programs, analysing performance, and managing competition schedules. Since many community sporting clubs target competitive success within the context of their own leagues and levels, their coaches must have a deliberate focus on improved sports performance (Lyle, 2002). Consequently, performance coaching is found not only in high-performance sport environments but also in community sport settings.

2.2.1. Coaching Young Emerging Athletes

The focus for sport performance coaches when working with young athletes (aged 9 - 12 yrs) who have already committed to highly structured and physically demanding year-round training and competition schedules (early specialisation) is to build the technical, tactical, physical and cognitive skills required for successful performance at current and future levels (Lyle, 2002; Côté et al., 2009; Cushion et al., 2010). Due to the young age of the athletes, however, great care must be taken to avoid occurrence of negative outcomes that can be associated with an early focus on training and competition (e.g., athlete burnout, overuse injuries, heightened anxiety, reduced social development and feelings of guilt following unsatisfactory performance) (Wiersma, 2000; Hedstrom & Gould, 2004).

2.2.2. Coaching Adolescent Performance-Focused Athletes

While many athletes pursuing a high-performance trajectory are adults, some

are younger emerging athletes who are transitioning into pre-elite competitors.

Coaches working with athletes in this part of the spectrum are primarily concerned with preparing them for the rigors of consistent high-level competition and developing capabilities that contribute to enhanced performance (Lyle, 2002; Côté & Gilbert, 2009). In addition to planning, implementing, evaluating and modifying detailed training programs, coaches in this part of the sport spectrum are often required to oversee the development of yearly competition schedules, provide administrative and managerial support, work with a range of sport scientists and other specialists, monitor and review performances and prepare athletes for life after sport (Lyle, 2002; Côté et al., 2007).

2.2.3. Coaching Adult High-Performance Athletes

The responsibilities and challenges of working in this part of the coaching spectrum are similar to those outlined above, but coaches are often under more pressure than counterparts engaged elsewhere on the spectrum. For example, the work of a high-performance coach is generally heavily scrutinised by both the media and the public who often judge performances only by win/loss ratios and consider the coach the sole reason for the competition results of the athletes and teams under their charge (Dawson, Dobson, & Gerrard, 2000; Rynne & Mallett, 2014).

3. What Skills Are Required to Be an Effective Coach?

Coaching is a unique occupation that is often performed in highly complex, heterogeneous settings that require an ability to work through a range of issues including the improvement of individual and/or team performance, developing and maintaining morale, and managing the many and varied personal, physical and emotional challenges that inevitably arise in such settings (Saury & Durand, 1998; Nash & Collins, 2006; Rynne & Mallett, 2014). Understanding the skills that enable coaches to effectively perform their roles in these challenging environments is critical to design of any undertaking focused on enhancing coach performance. **Table 1** provides an overview of the skills considered essential for effective coach practice (Lyle, 2002).

4. Expert Coaching: What Is It and How do Coaches Become Expert Practitioners?

Comprehensive understanding of the ways in which coaches can develop their expertise is an essential foundation for any initiative aimed at aiding the development of current coaches and guiding the advancement of future practices. Consideration of this task is important since no absolute consensus exists concerning an optimal approach to coach development (Cushion et al., 2010).

Physical education research suggests that expertise is a domain-specific trait and that high levels of subject matter knowledge and experience are essential for its development (Manross & Templeton, 1997; Tsangaridou, 2012). This point was highlighted by Chen and Rovegno (2000) who examined the differences

Table 1. Summary of the different skills, abilities and attributes required of coaches for effective performance in any part of the sport spectrum.

Planning Skills	Delivery Skills	Management Skills
Planning refers to a coach's ability to formulate the successful actions and strategies required to pursue and achieve a certain outcome in line with organisational guidelines while remaining within the limits of available resources (Lyle, 2002). The process includes identifying and setting achievable and realistic goals, developing action plans and strategies for the achievement of outcomes, monitoring progress and implementing any required changes (Enos et al., 2003).	Highly developed delivery skills are considered essential for effective coaching (Lyle, 2002) and include ability to: Individualise the learning process (Saury & Durand, 1998). Encourage, inspire and motivate others (Saury & Durand, 1998). Adapt practices to best suit particular situations (Côté & Gilbert, 2009). Work with athletes of different ages and competition levels (Côté & Gilbert, 2009). Communicate effectively and lead by example (Côté & Gilbert, 2009). Manage complex situations (Saury & Durand, 1998). Focus on the personal development of athletes by combining the teaching of life skills with the coaching of sport skills (Côté & Gilbert, 2009).	Fulfilling specific managerial-type tasks is an integral component of the coaching process (Lyle, 2002). Such tasks include: Engaging with key stakeholders (Lyle, 2002). Building strong relationships with people (Perkins et al., 2014). Prioritising tasks (Lyle, 2002). Cultivating safe, welcoming and positive training/learning environments (Perkins & Hahn, 2019). Developing policies and procedures (Lyle, 2002). Overseeing budgets and performing a range of other administrative tasks (Lyle, 2002).

between novice and expert teachers and discovered that the experts had developed certain skills over the course of their careers which enabled them to be much better than their non-expert counterparts at facilitating opportunities for the development of such outcomes as positive student interactions, critical thinking skills, and the linking of new learning to prior knowledge and experiences. Similar findings were reported by Bell (1997), who argued that experience is far more effective than verbal information for the development of domain-specific knowledge and expertise. Bell (1997) also noted the importance of providing learners with carefully planned and well-organised continuous learning opportunities throughout their careers and suggested the use of mentors as a way of facilitating this process.

When investigating the effects of subject matter expertise in teaching, Schempp, Templeton, & Clark (1998) concluded that there was a significant advantage when teachers taught subjects in which they had extensive knowledge, compared to when they taught subjects in which they had only limited experience and little or no expertise. The importance of subject matter expertise and topic-specific knowledge was highlighted also by Swap, Leonard, Shields, & Abrams (2001) who utilised a 1994 review published by Ericsson & Charness (1994) as a basis for arguing that experts acquire their knowledge at different stages of development and pass through various "*levels of knowledge acquisition*" throughout their careers.

According to Swap et al. (2001), providing learners with authentic and meaningful learning opportunities and then having them reflect upon those experiences is crucial for the development of domain-specific expertise. Swap et al. (2001) also support the use of mentors and, like Bell (1997), suggest that mentors often aid the learning process by proving critical feedback, assisting with the interpretation of experiences and providing appropriate levels of support (Swap

et al., 2001). It appears, however, that the effectiveness of mentors is relational-dependent and that positive outcomes tend to occur only once strong, positive, meaningful and reciprocal mentor/mentee relationships are in place (Dymock, 1999; Colley, Hodkinson, & Malcolm, 2003). This point was highlighted by McCaughtry, Cothran, Hodges-Kulinna, Martin, & Faust (2005) who investigated the effectiveness of mentoring relationships and reported that the most effective mentors tend to be passionate about helping and learning, have highly developed interpersonal skills, provide mentees with genuine care and support, have an ability to constantly motivate and encourage, and possess large amounts of domain-specific knowledge and pedagogical proficiency (McCaughtry et al., 2005).

Taken as a whole, the above makes it clear that mentor/mentee relationships require a significant investment in time and commitment from both parties to be effective. Consequently, care should be exercised in pairing mentors with mentees so as not to impede the coach development process by providing emerging coaches with avoidable negative experiences.

When considering the different ways in which coaches can develop their expertise, DeMarco & McCullick (1997) examined prior research on coaching effectiveness and other domain-specific expert performances, then identified the following five key characteristics of expert coaches:

- They possess extensive, specialised knowledge.
- They organise knowledge hierarchically.
- They are highly perceptive and superior problem solvers.
- They exhibit automaticity during analysis and instruction.
- They have highly developed self-monitoring skills.

According to DeMarco & McCullick (1997), coaches develop their expertise from experience, goal setting, acquiring knowledge throughout their careers, expanding their thinking, developing their memories, interacting with and observing other coaches and practices, self-evaluation and critical reflection, and improvement of certain cognitive skills including problem solving and automaticity. These authors, however, emphasise that coaching expertise is not achieved by simply acquiring the above characteristics. Instead, they note that many other important factors, including personal traits, motivation, ambition, and opportunity all play vital roles in the development of domain-specific coaching expertise (DeMarco & McCullick, 1997).

Similar themes are presented by Schempp et al. (2006), who utilised Berliner's (1994) five-stage developmental process to analyse and describe the skills, knowledge and capabilities of beginner, competent, proficient and expert coaches. Schempp et al. (2006) propose that every expert coach starts at the first stage as a beginner and progresses through the various stages by identifying his/her deficiencies and ways in which they can be addressed. Progress through the stages is determined by several factors including the degree of exposure to high-level coaching, the extent of opportunity to take part in formal and non-formal learning experiences, personal characteristics, and influences outside

of sport, such as work and family commitments. Schempp et al. (2006) conclude that seven key attributes are required for expert coaching. These are summarised below.

4.1. Extensive Knowledge

Expert coaches are passionate about learning and acquire their knowledge through various means, including personal experiences, formal educational programs, mentors, attending workshops, courses and conferences, reading books, magazines and journal articles, and working with athletes and other coaches (Schempp et al., 2006).

4.2. Planning

A key characteristic of expert coaches is that they have high regard for planning, with many seeing it as an integral and essential part of their role (Schempp et al., 2006).

4.3. Intuition

Developed over many years and stemming mostly from their extensive use of experimentation, reflection and failing and succeeding, expert coaches often use "gut feelings" when making decisions. Importantly, a key factor that tends to separate expert coaches from less expert colleagues is the extent to which intuitive decision-making yields positive outcomes and useful solutions (Schempp et al., 2006).

4.4. Attention to the Atypical

When discriminating information, expert coaches have a knack for recognising what is important and ignoring what is unnecessary. For example, when overseeing a training practice an expert coach is subconsciously screening and assessing the session for both typical (usual) and atypical (unusual) occurrences. Upon detecting a negative atypical event, an expert coach calls upon his/her extensive knowledge to firstly discover the cause of the problem and then quickly resolve the issue by providing the most appropriate response with a minimum of fuss (Berliner, 1994; Schempp et al., 2006).

4.5. Self-Monitoring

Expert coaches are generally better than non-expert coaches at identifying and understanding their shortcomings and they tend to acknowledge their deficiencies more openly (Schempp et al., 2006). Because expert coaches are passionate about what they do, they also tend to be more open and committed to the concepts of self-improvement and professional development (Lyle, 2002).

4.6. Problem-Solving

Expert coaches are often much better at analysing problems and developing solutions than their non-expert counterparts (Schempp et al., 2006).

4.7. Automaticity of Behaviour

Expert coaches can perform a wide range of complex tasks in ways that appear to be completely natural and almost effortless, but that nearly always produce the intended outcome and/or result (Schempp et al., 2006).

4.8. Summary

While experience is a key contributor for the development of expertise, other important factors such as high levels of motivation and determination, good fortune, and an existing foundation of talent and innate ability are also required. Experts can adapt their practices, styles and approaches to best suit the needs of a particular situation. Expert coaching can therefore be described as an agile, dynamic and fluid endeavour that is constantly adjusting and adapting to the specific demands of a particular setting in an attempt to best meet the individual needs of each athlete (Lyle, 2002; Mallett, 2007; Côté et al., 2007)—an undertaking described by Cushion (2006) as "*structured improvisation*", and by Berliner (2001) as "*flexibility in practice*". This description not only provides a benchmark to measure current work practices, but helps to demonstrate that, to be truly effective, coach development undertakings should at least consider the following three most common findings reported in the literature.

- Expertise is a dynamic state.
- Expertise is domain specific.
- Basic components of expertise can be identified as knowledge, experience and problem solving (Herling, 2000).

5. Current Approaches to Coach Learning and Development

The ways in which coaches learn and acquire their knowledge have been thoroughly reviewed and critically evaluated by Cushion et al. (2010) whose systematic review of the coach learning literature shows that coaches across all parts of the sport spectrum are influenced by a mixture of individualised and sometimes ad-hoc formal, non-formal, informal and self-directed learning experiences. The review also reveals that while most coaches tend to favour informal approaches to learning, self-directed learning is the preferred method for expert coaches.

Cushion et al. (2010) also note, however, that the optimum mix for coach learning is still unknown and that due to an over-focus on elite level coach learning, the literature provides little information regarding the learning preferences and needs of coaches working in the developmental parts of the spectrum. To facilitate better understanding of how emerging coaches acquire the skills and knowledge needed for the development of domain and level specific expertise, a general outline of the different types of learning is presented below.

5.1. Formal Learning

In Australia, formal approaches to coach learning mostly take place within the

context of readily accessible coach accreditation courses offered and administered by National Sporting Organisations (NSOs), and through various courses developed and delivered by experts in the Vocational Education and Training (VET) sector and other higher education settings (universities). As the name implies, this type of learning is generally highly structured in terms of objectives, curriculum, and attendance requirements and is usually designed in ways that enable attainment of formally recognised, prescribed and predetermined outcomes designed to meet competency-based requirements (Merriam, Caffarella, & Baumgartner, 2007).

5.2. Non-Formal Learning

Although formal and non-formal learning share many similar characteristics, the latter tends to be more autonomous and less structured, meaning that it does not have to follow a formal syllabus or adhere to an external accreditation and assessment framework (Merriam et al., 2007). Regarding the autonomous nature of this mode of learning, LaBella (1982) suggests that while it is non-mandatory there is still an intention from both the teacher/instructor and the learner to work together to achieve a pre-planned goal. An example of this approach to coach learning is a developing coach making a deliberate and intentional decision to improve a certain skill or develop an area of knowledge outside of the formally structured learning system by participating in a subject-specific workshop, attending a conference or working with a more experienced coach (Mallett, Trudel, Lyle, & Rynne, 2009; Cushion et al., 2010).

5.3. Informal Learning

While there is no single authoritative definition of informal learning, the contemporary understanding is that it happens outside the formal education system, is mostly unstructured, does not lead to a qualification and tends to be the outcome of incidental everyday experiences (Conlon, 2003; Richardson, 2004). Ways in which informal learning can occur include:

- Reading and using the internet.
- Watching relevant television programs.
- Attending public lectures.
- Learning from family and friends.
- Learning through doing the job.

Interactions with athletes and other coaches, personal coaching experiences, observing other training sessions and reading are some of the ways developing coaches can generate new knowledge and enhance existing skills through informal approaches to learning (Mallett et al., 2009; Cushion et al., 2010).

5.4. Self-Directed Learning

In its broadest sense, self-directed learning refers to the ability of an individual to identify his/her own learning needs, determine the goals, understand what

resources are required for achievement of successful outcomes, develop and apply the appropriate strategies, and evaluate the outcomes with or without the help of an outsider (Knowles, 1975; LaBella, 1982; Merriam et al., 2007). Because the responsibility for learning shifts from an external source to the individual, self-directed learning can also be thought of as an autonomously led approach to the organisation of learning and knowledge attainment (Kaufman, 2003). Proponents of this approach argue that it can improve such valuable personal traits as self-confidence and autonomy, while also enhancing existing learning skills by turning learners into active participants in life-long learning journeys (Knowles, 1975; Kaufman, 2003). To be effective, however, self-directed learning requires learners to have an ability to:

- set clear and achievable goals.
- plan, implement and evaluate learning activities.
- form close, respectful and meaningful relationships.

In addition, most self-directed learners are:

- willing learners and passionate about a particular area of practice.
- curious and autonomous by nature.
- self-motivated and highly disciplined.
- capable of individualising and customising a learning process to fit their own goals and needs (Knowles, 1975; Kaufman, 2003).

A summary of the formal, non-formal, informal and self-directed approaches to coach learning appears in **Table 2**.

6. A Closer Look at Informal Coach Learning

Coaches typically begin their informal learning journey during a long period of involvement in sport as athletes. Later, experiences obtained as coaches and observation of other coaches can become powerful mechanisms of informal learning.

6.1. Involvement in Sport as an Athlete

Sport participation experience as an athlete is an unquestionable source of coach learning (Ericsson & Charness, 1994). While this is more evident in certain

Table 2. Overview of some of the different approaches used to support and influence coach learning and development.

Formal Coach Learning	Non-Formal Coach Learning	Informal Coach Learning	Self-Directed Coach Learning
Learning arises from attending a structured formal coach education/ learning course. Outcomes are generally recognised with a qualification and/or certificate (Mallett et al., 2009).	Learning occurs through a range of non-formal activities that are not usually evaluated and do not lead to certification (Cushion et al., 2010; Mallett et al., 2009).	Learning takes place in daily work-related settings and in other informal and often incidental ways (Cushion et al., 2010; Mallett et al., 2009).	Learning is the result of an autonomously led approach to the organisation and attainment of knowledge (Kaufman, 2003).

sports (Cushion et al., 2010), it has been consistently reported that many coaches across the entire sport spectrum developed the foundations of their craft as athletes (Erickson, Bruner, MacDonald, & Côté, 2008; Nelson, 2010).

For example, when examining the developmental profiles of successful American high-school sport coaches (basketball and cross-country running), Gilbert, Lichtenwaldt, Gilbert, Zelezny, & Côté (2009) found that the coaches in their study had extensive experiences as athletes (Mean = 2428.8 hours; 19.6 seasons), rated their playing ability as above average, and had participated in both individual and team sports during their athletic careers. Similar results were presented by Lynch & Mallett (2006), who utilised the same in-depth quantitative structured interview approach to investigate the developmental profiles of successful Australian elite-level track and field coaches. Lynch & Mallett (2006) reported that all of the coaches in their sample had participated in various team sports, perceived that their athletic ability was above average in comparison to age-matched peers, and had accumulated an average of ~4400 hours of sporting experience as athletes.

The major themes reported in the above studies (i.e., accumulating thousands of hours as athletes, being of above average in ability and not specialising in the sport they now coach) are consistent with the findings of other scholars who have reported that positive outcomes achieved through this early stage of coach development include that it provided a basic understanding of the coaching role through exposure to different coaches and approaches (Gilbert et al., 2009), promoted multiple learning experiences (Wright, Trudel, & Culver, 2007), gave important insights into some of the challenges associated with staging a training session (Bloom, Durand-Bush, Schinke, & Salmela, 1998; Wright et al., 2007) and, perhaps most importantly, facilitated an ability to empathise with athletes (Schempp et al., 2006; Cushion et al., 2010).

6.2. Experiential Learning

In simple terms, experiential learning is learning from experience (Irwin, Hanton, & Kerwin, 2004). This dynamic, holistic and multi-dimensional approach to development of knowledge is applicable not only in various education settings but in all areas of life and is present in almost every human endeavour, which might be why it is so often cited in the coach learning literature (Gilbert & Trudel, 2001; Cushion et al., 2010).

6.2.1. Kolb's Experiential Learning Model

One of the most popular models for explaining how new skills, knowledge and insights are acquired through experience is Kolb's four-stage experiential learning model (**Figure 3**). According to Kolb (1984), new knowledge is generated when a learner successfully transitions through the four stages outlined below, and although learning can begin at any stage of the cycle, no single stage can be considered an effective learning experience on its own.

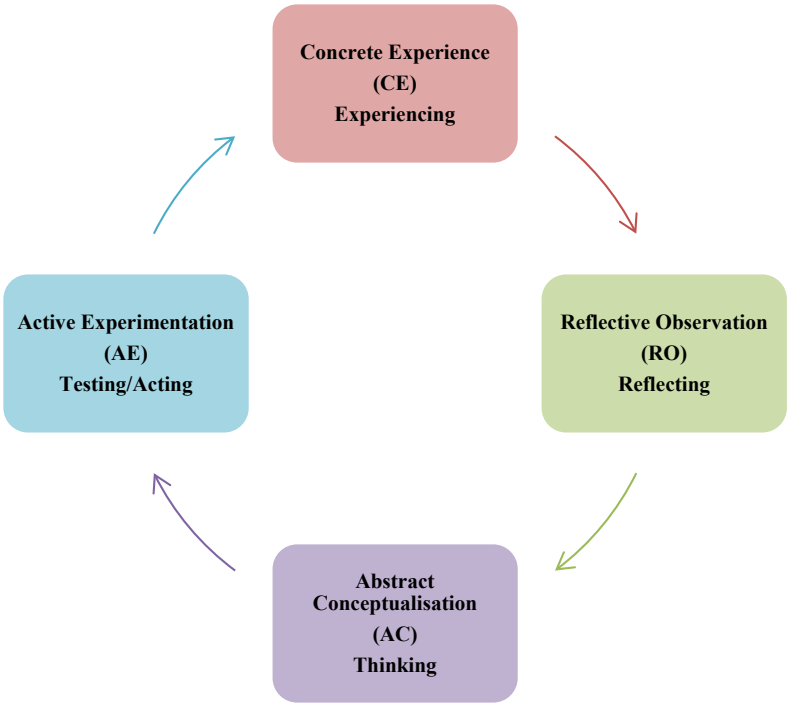


Figure 3. Schematic illustration of Kolb's experiential learning model, in which learning is grounded in reflection and continuously modified by new experiences.

1) An example of Kolb's learning cycle in action

Kolb's experiential learning model can be exemplified as follows:

Stage 1: A coach has a concrete experience of something new during a training session. This could be, for instance, the implementation of a novel activity as part of a new teaching method.

Stage 2: The concrete experience is followed by a period of reflection. During this stage, the coach considers what went well and identifies areas of possible improvement. It is here that the coach develops an initial understanding of what aided the athletes' learning and what hindered it.

Stage 3: This is when the coach makes sense of what has happened by conceptualising links between what the athletes just did, what the coach thinks they already know and what he/she thinks is needed for further improvement. To aid this process, the coach may use diverse strategies to clarify and explore his/her ideas, with the strategies including reading of online articles, textbooks, and perhaps even research papers.

Information can also be accessed from other valuable sources, including YouTube videos, other coaches, conversations with athletes and sport scientists, and existing knowledge. The important thing here is that the coach modifies his/her initial ideas based on what has been learnt from the observations and wider research.

Stage 4: The coach now applies what has been learnt by taking the ideas from the reflective observation and conceptualisation stages and turning them into active experimentation. The cycle is then serially repeated, always underpinned

by the newly acquired knowledge.

6.2.2. Gibbs' Reflective Cycle

Understanding of what occurs during the reflective stage of Kolb's learning framework has been aided by Gibbs (1988), who presented a six-stage model to assist with the examination and interpretation of experiences. As can be seen in Figure 4, the first three stages are concerned with what happened, while the remaining three entail formulating a response to the experience.

1) An example of Gibbs' Reflective Cycle in action

Gibbs (1988) notes that capacity for reflective practice can be developed by having a learner consciously step through the six-step process in relation to a specific occurrence. A summary of how this might be done in a coach learning environment is provided below.

a) Description: During the initial phase, a coach should aim to provide a clear and accurate account of an experience. At this stage, the descriptions do not need to be analytical, but the account should be factual and concise (Gibbs, 1988).

b) Feelings: The coach should use this stage of the process to identify and record any thoughts and/or or feelings they had during the experience, with

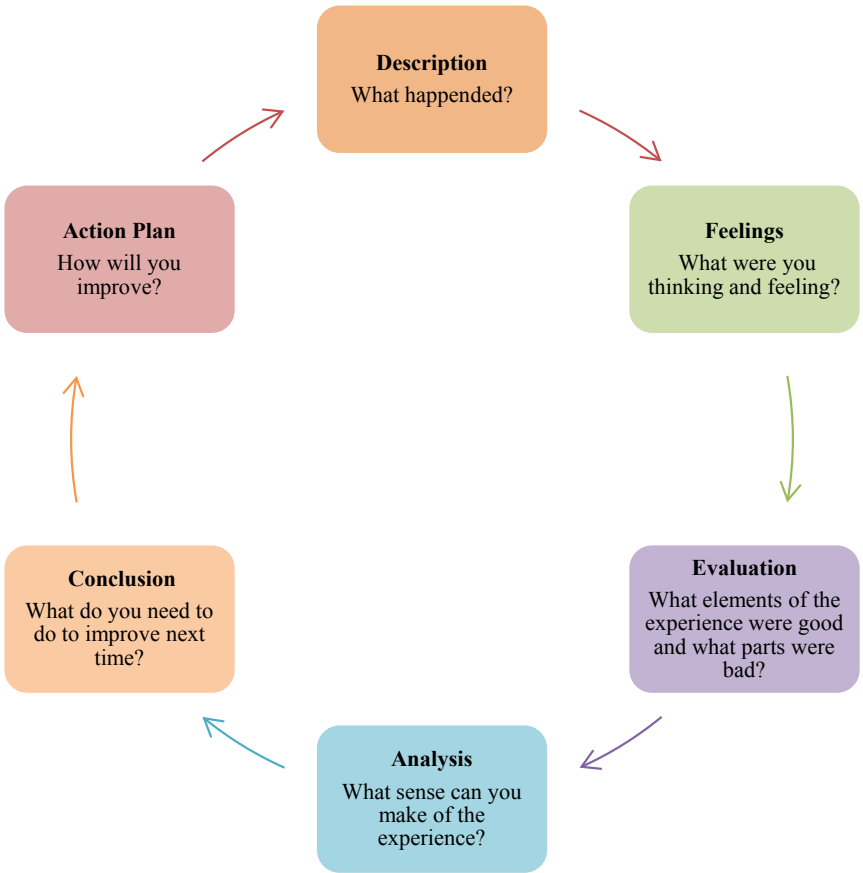


Figure 4. Overview of Gibbs' six stage Reflective Cycle outlining how this approach to learning could aid the development of coaches.

these directly referenced to specific moments of the experience. It is vital that the coach is completely honest in this task since correct identification of thoughts and feelings is prerequisite to effective development of strategies in response to the experience (Gibbs, 1988).

c) Evaluation: This phase provides an opportunity for the coach to consider what went well and what did not go as well as initially planned (Gibbs, 1988).

d) Analysis: During this phase the coach may refer to relevant literature and/or seek the support of a More Knowledgeable Other to help make sense of the experience (Gibbs, 1988).

For example, if a coach felt the instructions given were not clearly understood, he/she could consult educational research on effective communication to help develop his/her skills.

e) Conclusion: Based on the coach's research, all the different ideas are pulled together resulting in a clear understanding of what needs to be improved and the ways in which it can be done (Gibbs, 1988).

f) Action plan: The coach creates a step-by-step detailed plan for provision of a new learning experience by utilising information arising from the previous five phases. Here the coach decides what will be kept, what requires changing and what can be done differently (Gibbs, 1988). The action plan can also include strategies aimed at gaining further insights. For example, observing another coach's training session, talking to More Knowledgeable Other and spending time with a mentor can all be effective ways to enhance coach development (Cushion et al., 2010; Nelson, 2010).

6.2.3. Reflective Practice

Similar to the above, Schon's (1983) reflection theory focuses on 'learning by doing' and provides a suitable framework for coaches to examine what informs their practice and to determine how these factors might subsequently aid or hinder their work (see for example, **Figure 5**). Schon's (1983) theory suggests that the learning incorporates the following two elements:

Reflection-in-action: In a coach development context, this refers to quick thinking and responses during a training session. For instance, a coach trying to explain something which the athletes do not initially understand may be able to reflect-in-action to quickly recognise the problem, understand why it is occurring, and promptly respond to it by reframing the explanation or approaching the topic from a different perspective.

By contrast, **reflection-on-action** would take place after the training session. Here the coach has the time and space to critically reflect on what occurred and can think much more deeply about the situation. Critically reflecting on his/her action not only allows the coach to develop a more refined understanding of what caused the initial problem but enables the development of solutions aimed at minimising the potential for recurrence. The quality of the solutions, however, depends on coach characteristics such as level of knowledge, degree of experience and understanding of relevant theories (Schon, 1983).

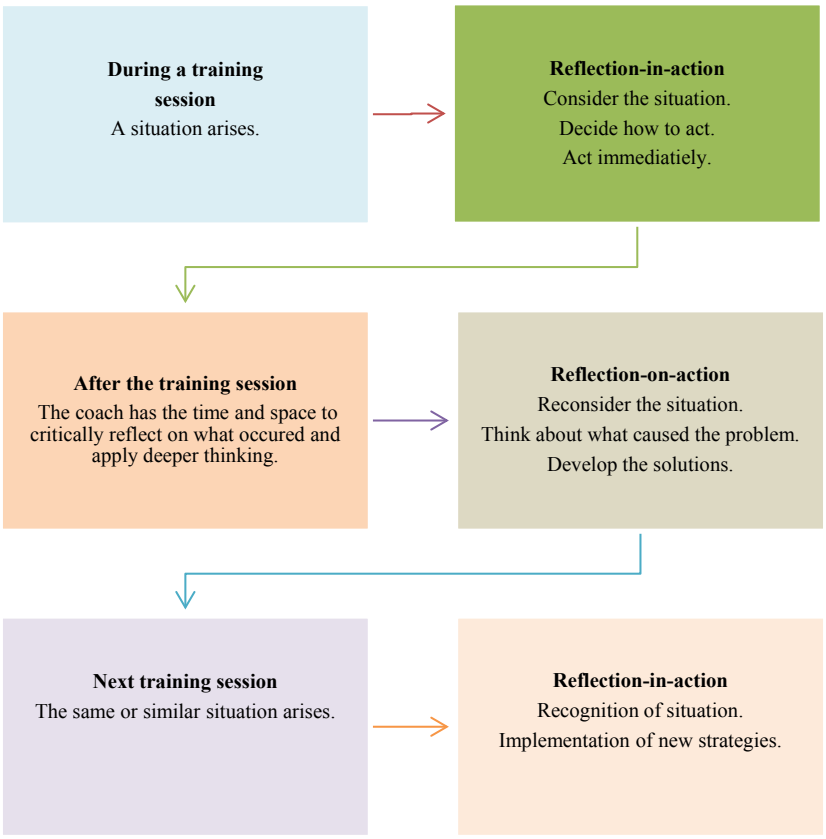


Figure 5. Schematic overview of the ways in which "reflection-in-action" and "reflection-on-action" can aid the development of coaches by getting them to think deeply about their current practices and identify factors that could subsequently aid or hinder their progress.

While the above emphasises that experiential learning and reflective practice can play important roles in the development of coaches, all three models outlined highlight the need for repeating cycles to ensure continual progression of learning. It is also clear that being informed by research and making sense of previous experiences are key factors for both professional and personal growth of coaches, and for their learning and development. These processes could potentially be enhanced through appointment of a suitably qualified person who could take on the role of a More Knowledgeable Other and help developing coaches to translate outcomes of contemporary research and innovation into routine practice. Suggestions for the implementation of such a role are outlined later in the paper in Section 10.

6.3. Social Learning

Bandura's (1986) Social Learning Theory, which he later renamed as Social Cognitive Theory, explains that individuals can learn and develop new skills and behaviours simply through observing others, interpreting their actions, and imitating them (Table 3). The learning can occur through exposure to any or all of three different types of modelling:

Table 3. An example of how coach development could occur through social learning.

Requirements	Bandura's Description	Coach Development Example
Attention	An individual notices something in the environment (Bandura, 1986).	A developing coach observes the behaviour and attitude of a More Knowledgeable Other.
Retention	The individual remembers what was noticed (Bandura, 1986).	The behaviour of the model produced: High levels of confidence and passion. Enjoyment. Carefully constructed training activities. High levels of athlete engagement. Displays of mutual respect and trust. Athletes being asked a lot of thought-provoking questions.
Reproduction	The individual produces an action that is a copy of what was noticed (Bandura, 1986).	In conducting training sessions for his/her own athletes, the developing coach mimics the observed behaviours of the More Knowledgeable Other.
Motivation	The environment delivers a consequence that enhances the probability the behaviour will occur again (Bandura, 1986).	Positive reinforcement and encouragement from the More Knowledgeable Other. Positive feedback from athletes and other stakeholders.

- **Live modelling:** An individual observes a behaviour or action in a real-world situation.
- **Symbolic modelling:** An individual observes a behaviour or action displayed by real or fictional characters in books or visual media.
- **Verbal instructional modelling:** An individual is verbally supplied with a description or explanation of a behaviour.

While the modelling may sometimes be deliberate and planned, it often occurs incidentally as part of routine interaction with various players in the social world of the learner.

The effectiveness of social learning depends on the level of attention that the learner directs to the model, the extent to which the learner is able to code and retain the information, attempts by the learner to reproduce the modelled actions (with repeated attempts usually leading to improved performance), and the motivation of the learner.

Intrinsic reinforcement, such as satisfaction and pride associated with performance of the action, is essential to ongoing motivation. Notably, motivation can be influenced by observing any rewards or punishment experienced by the model because of the observed action.

Bandura (1986) emphasised that social learning is not just a matter of mentally recording an observed behaviour and then replaying it, but instead depends critically on the way in which the learner functions as an active agent in transforming, classifying and organising the modelling stimuli into easily remembered schemes that can be accessed for the purpose of reproducing the behaviour (see for example, Figure 6). This means that different individuals exposed to the same modelling may have different learning outcomes.

Figure 6. The lead author (fourth from left in back row) and his Indian counterparts (second and third from left) working together to assist the development of participation coaches in northern India through the use of social and collaborative approaches to learning. A key message intended to encourage continuous learning during the 6-day learning event is presented below: "Great coaches are not born—they are made. Beginner coaches become accomplished coaches, and skilled coaches become great coaches, by thinking hard about their coaching and discovering new ways to improve it."—Adapted from: Becoming A Reflective Mathematics Teacher: A Guide for Observations and Self-Assessment 1st Edition.

According to Bandura (1986), the personal characteristics of an individual both influence and are influenced by the behaviour of the model and the social world in which he or she operates, through a mechanism described as "triadic reciprocal determinism".

The characteristics of the model are clearly crucial to the social learning process. Interesting and/or admired models are more likely to attract the attention of the prospective learner, thus setting the process in motion.

7. Common Learning Methods That Emphasise Informal Learning

Some common learning methods in which informal learning predominates are described below.

7.1. Situated Learning

Lave & Wenger (1991) argue that optimal learning occurs within the context of its intended application, and that knowledge can be very effectively acquired through participation in apprenticeship-type roles within the confines of a community of practice. According to Lave & Wenger (1991), newcomers join these communities as apprentice members who initially participate in only low-risk introductory activities but then take on tasks of increasing complexity as they gain the knowledge and vocabulary of the community. As learners gain

more experience and competence, they gradually move from an apprenticeship role to full participants via a process called "legitimate peripheral participation"—learning by immersion as a part of the process of becoming a community member (Lave & Wenger, 1991). Situational learning provides opportunity for convergence of formal and informal methods of learning in an environment that strongly favours transfer of learning to real-world practice. Down (2002) notes that it stands in stark contrast to the "patterning and dependency" learning methods currently employed in the Australian vocational and educational training sector and could be instrumental in creating a more adaptable workforce.

7.2. Cognitive Apprenticeship

The pedagogical strategies underpinning the theory of situated learning are also embodied in the Cognitive Apprenticeship Model (Collins, Brown, & Newman, 1989), as can be seen in **Figure 7**. This approach to learning is likewise a social and collaborative process whereby knowledge is acquired and contextually tied to the settings and situations in which it is learnt. Similar to a community of practice, learning in this context is guided by the expertise of a More Knowledgeable Other who encourages and challenges learners to solve problems with critical thinking and kinaesthetic ability—in the same way an apprentice learns a trade under the supervision of a master tradesperson (Collins et al., 1989; Brown, Collins, & Duguid, 1989; Spector, 2015).

Teaching Methods

The teaching methods summarised below are an integral to the cognitive apprenticeship model and are used to develop the critical thinking skills required for the successful completion of domain-specific complex tasks (Collins et al., 1989).

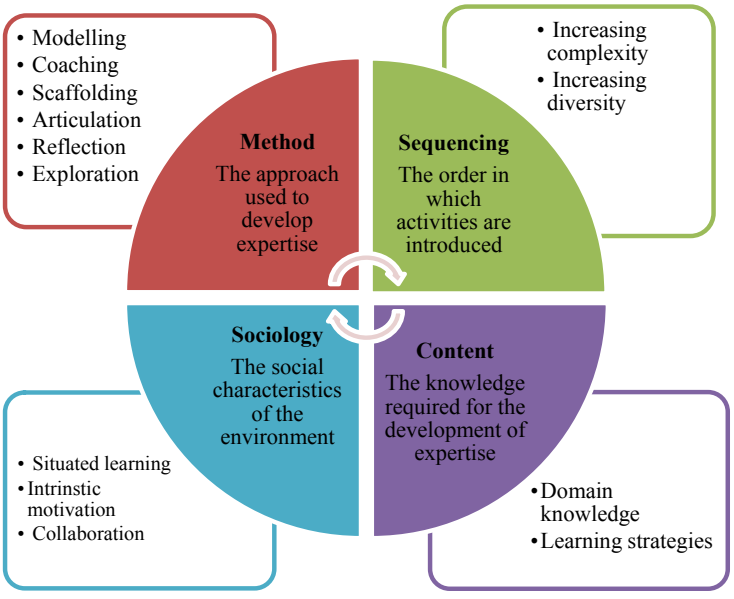


Figure 7. Schematic representation of a cognitive apprenticeship model illustrating the four dimensions that underpin this approach to learning.

1) Modelling

Modelling is the process whereby learners build a conceptual model of the task after observing an expert demonstration (Collins et al., 1989). For example, a More Knowledgeable Other using explicit instructions while demonstrating how to implement a specific training drill would be providing a model to a developing coach.

2) Coaching

Coaching refers to the provision of instructions, suggestions, cues, and prompts that a More Knowledgeable Other would provide to a developing coach to ensure tasks were correctly completed (Collins et al., 1989).

3) Scaffolding

Under the cognitive apprenticeship model, scaffolding is the level of support offered to learners when they are developing their skills (Enkenberg, 2001). For example, a More Knowledgeable Other may need to provide additional assistance to a developing coach regarding a particular aspect of their role.

4) Articulation

Articulation is the process of having learners verbalise their knowledge, reasoning, or problem-solving skills (Collins et al., 1989). In the coaching context, this process would include a More Knowledgeable Other asking questions, which would enable the developing coaches to refine their thinking while facilitating opportunities for collaborative learning.

5) Reflection

Reflection is an integral part of the learning process (Schon, 1983; Kolb, 1984; Gibbs, 1988) and would provide an opportunity for the developing coaches to analyse their own performance and identify areas of improvement that models the behaviour of the More Knowledgeable Other.

6) Exploration

Exploration is an advanced stage of the learning process and occurs when learners can correctly identify problems and devise solutions themselves (Collins et al., 1989). To enable developing coaches to reach this stage, a More Knowledgeable Other would need to withdraw his/her support while still assisting where required.

7.3. Mentoring

Studies investigating the effectiveness of mentorships appear to have been conducted mostly within particular fields of interest and with a specific type of relationship focus. Results from this research (Wanberg, Welsh, & Hezle, 2003; Young, Cady, & Foxon, 2006) are highly compatible with what has been reported in the coach learning literature (briefly outlined in Section 4) in showing that mentor/mentee relationships are often highly complex, have the potential to provide both positive and negative outcomes, and require a significant investment in time and commitment from both parties to be effective (McCaughtry et al., 2005; Colley et al., 2003). In attempting to support the development of coaches through mentorships, it is important to ensure that there are no unin-

tended negative experiences—sentiments also expressed in Section 4.

8. Advantages and Disadvantages of the Less Formal Approaches to Learning

Research shows that coaches value non-formal learning methods above the formal methods typically employed in coach accreditation courses (Nash, 2008; Cushion et al., 2010; Nelson, 2010), and that many coaches have learnt their skills through more social and collaborative approaches that have been both observational in nature and based in their work situations (Cushion, 2007; Mallett, 2007; Nelson, 2010).

One of the primary advantages of informal learning is that it facilitates transfer of learning to practical applications. In general, it is also much less expensive and more continuous (in that it can continue throughout life). It makes use of expertise apart from that existing with the formal education sector, and it tends to result in communities of practice within which learners share their knowledge and experience.

On the other hand, there are some disadvantages associated with promotion of informal learning as a means of professional development. These include inability to ensure coverage of specific content, difficulties with quality assurance and monitoring of progress, and challenges associated with recognition of learning through appropriate certification. Lack of recognised formal qualifications can limit the vocational opportunities of the learners. Additionally, there is risk of an availability bias in the use of resources to support learning. This may be manifest through a focus on easy-to-access information rather than that which is more difficult to find. Informal learning undertaken in some socio-cultural environments can produce negative outcomes such as social categorisation, stereotyping, in-group favouritism, prejudices and discrimination (DiLalla & Gottesman, 1991; Sobhaninejad, 2005).

Research conducted by Johnson et al. (2018) on the effectiveness of the 70:20:10 framework in Australian public sector environments revealed that for various reasons the framework was failing to produce the desired outcomes. One major weakness was an assumption that experiential learning and capability development could be automatically achieved simply by having people act in higher positions, with no need for supporting structures aimed specifically at learning facilitation. It was also found that social learning was being pursued largely through coaching, mentoring and networking, with very little attention given to the potentially profound effects of incidental observational learning and role modelling. A further problem was that experiential, social and formal learning activities were being implemented separately, with essentially no attempt to integrate them. This raised possibilities for inconsistencies of learning in the different contexts.

The design of any initiative aimed at enhancing coach education and development through informal learning processes obviously would need to take careful account of the above. There are clear risks that informal learning can be

wrongly equated to learning without structure, and that processes designed to accomplish it can be pursued in complete isolation from any concurrent formal learning.

9. Insights from the Adult Learning Literature

Because most coaches are adults, it is worth considering the principles that presently form the basis of adult education programs, along with the known deterrents to adult learning.

9.1. Pedagogical/Andragogical Principles

A summary of the general principles of adult learning is provided in Table 4. Awareness of these principles may assist in providing more effective learning opportunities by connecting the motivation of coaches with the topics that need to be taught.

9.2. Known Deterrents to Adult Learning

According to Cushion et al. (2010) and Nelson (2010), barriers to coach learning have been largely unexplored and knowledge of them is still incomplete. Studies focused on adult learning in general have shown, however, that situational barriers (e.g., lack of money and being too busy) and institutional barriers (e.g., costs, location of venues and courses being held at inconvenient times) are the major reasons for non-participation in courses and programs (Cross, 1981; Valentine & Darkenwald, 1990).

9.3. Motives for Coach Learning

A separate but related area of investigation relevant to design of an initiative focused on coach development is the identification of motives for coach learning. Sports Coach UK (2004) reported that unqualified coaching practitioners (i.e., individuals who practice without being certified) are more likely to attend a

Table 4. Overview of the principles of adult learning, along with examples of how the information can be practically applied.

Principles of adult learning	Empirical foundations
Learning should be self-directed	There is growing evidence suggesting that when adult learners are encouraged to be responsible for their own learning the information is learnt more easily and quickly (Merriam, 2001; Blondy, 2007).
Learning should fill an immediate need	Adults tend to learn better when the information is related to a perceived need (Merriam, 2001; Blondy, 2007).
The learning should be experiential and highly participatory	Most adults are task-oriented, which means they learn best when it relates to their experience (Merriam, 2001; Blondy, 2007).
Learning environments should be respectful and encouraging	Mutual respect and trust encourage people to share their views more openly (Merriam, 2001; Blondy, 2007).

course when it is locally available and free. While this alone is not surprising, results from the same study show that coach learning/education providers (e.g., local authorities, universities, and school representatives) have acknowledged the importance of making further funds available to support coaches in their ongoing development (Sports Coach UK, 2004). It is not clear, though, what strategies (if any) the coach learning providers have implemented to help address this issue, nor are there any reports of the effects of such strategies on factors such as retention rates, improved performance and transition into higher levels of coaching.

Vargas-Tonsing (2007) administered a Likert-scale based questionnaire to 366 youth sport coaches to identify potential factors that would increase the likelihood of further engagement with different forms of coach learning courses.

The results indicated that the coaches would be more willing to engage in higher-level coach learning courses if they were certain that attendance would enhance their ability to coach, if the content was directly relevant to their learning needs, and if it was a mandatory requirement.

10. Suggestions for Moving Forward: Design of a Coach Learning & Development (CLAD) Program Emphasising Informal Learning Methods

The research summarised in this document suggests that a specifically designed program underpinned by informal approaches to learning, guided by the pedagogical expertise of a More Knowledgeable Other and framed by a commitment to the concepts of excellence and continuous improvement would be the most effective way to assist with the development of coaches. The following provides suggestions intended to aid the construction of such a program, thereby meeting the needs of contemporary sport coaches by encouraging, supporting, and guiding them on highly personalised and self-directed learning journeys. The suggestions, however, are intended to provide relevant organisations with ideas that might facilitate creation of programs appropriate to their own needs, rather than being in any way prescriptive.

10.1. Step 1: Appointment of a Program Coordinator/More Knowledgeable Other

In the opinion of the authors, a logical first step for the successful implementation of a comprehensive coach development initiative would be the appointment of a suitable Program Coordinator/More Knowledgeable Other. The appointee would need to have substantial coaching experience and a passion for helping others and seeing them succeed. In addition, the Program Coordinator would need a demonstrated ability to translate theory into practice. A history of involvement in successful development, implementation and management of multi-layered sport development programs also would be beneficial.

10.2. Step 2: Understanding the Existing CLAD Landscape

One of the first tasks of the Program Coordinator would be to develop a com-

prehensive understanding of coach education resources and practices already present in the geographic area covered by the initiative. An effort would be made to identify any gaps in the existing procedures and to determine, through a consultative process, how the available resources might be drawn together and complemented in a way likely to enhance the professional development of coaches and the recognition of coaching as a highly skilled, knowledge-based vocation.

10.3. Step 3: Cooperative Design of the CLAD Program

The people to be involved in delivering the CLAD program would need to discuss and eventually agree upon its key elements. We suggest that the program could incorporate the creation of "critical friendships" and communities of practice.

10.3.1. Critical Friendships

The concept of critical friendship, which appears to have originated from the work of Stenhouse (1975), has been extensively used in the preparation and professional development of teachers (Costa & Kallick, 1993; Ellwood, Roberts, Thorpe, & Williams, 2012; Bognar & Krumes, 2017), but has been deployed also in other contexts (Ellwood et al., 2012; Hannuksela, 2018), including support of action research (Kember, Ha, Lam, Lee, Ng, Yan, & Yum, 1997). A critical friend is someone who works closely with the learner to provide meaningful feedback and ideas relating to the work of the learner (Swaffield, 2008). The role is different from that of a reviewer or assessor, in that the critical friend has the interests of the learner at heart (Costa & Kallick, 1993). A critical friend differs from a mentor by having a closer relationship with the learner.

Numerous attempts have been made to define the characteristics of a critical friend (MacBeath & Jardine, 1998; Bambino, 2002; Swaffield, 2008). However, Stolle, Frambaugh-Kritzer, Freese, & Persson (2019) have noted that these characteristics can differ quite markedly. Accordingly, they have produced a Critical Friend Definition Continuum to demonstrate that a critical friend may be a previous close friend of the learner, a stranger, or lie somewhere in between. In a similar way, there can be variation in the extent to which the critical friend is associated with the organisation within which the learner is located, the level of expertise of the critical friend, the degree of contact between the critical friend and the learner for the purposes of the project, and the extent of specification of the expected outcomes of the critical friendship. Some critical friendships are reciprocal in nature, such that each partner in the relationship can learn from the other, and a learner may sometimes benefit from having multiple critical friends.

Stolle et al. (2019) argue that the ideal settings for the parameters included in the Critical Friend Definition Continuum depend on the objectives and context of the critical friendship, and on the part that the critical friend is intended to play. Nevertheless, researchers have identified several factors that generally influence the effectiveness of critical friendships. These include role clarity, the existence and progressive building of mutual trust, the commitment of both parties

to the arrangement, the duration and stability of the relationship, the critical friend having a genuine understanding of the situation in which the learning arising from the relationship is being applied, and the willingness of the critical friend to provide honest feedback even if it could be unpalatable (Swaffield, 2007). Trust on the part of the learner can be affected by the pre-existing reputation and perceived credibility of the critical friend, but Swaffield (2007) has emphasised that impressions formed at the first meeting of the two parties can also have a significant influence. She further suggests that a critical friend needs to be a supporter and advocate for the learner, and never a judge undertaking assessment of the learner on behalf of some overseeing authority.

In the research of Stolle et al. (2019), successful critical friendships were found to be typified by vulnerability (uncertainty, risk, and emotional exposure), true reflection, and continual scepticism as to whether the relationship is fully achieving its aims. Swaffield (2008) identified dialogue as the core of effective critical friendships and noted that it can be inhibited where there are power inequalities between the critical friend and the learner.

The notion of critical friendship is clearly consistent with the view of Vygotsky that learning is socially constructed (Tudge & Winterhoff, 1993). In a general sense, a critical friend can serve as a More Knowledgeable Other (Stolle et al., 2019) who can assist the learner within the latter's zone of proximal development. It is noteworthy, however, that the critical friend does not need to be more knowledgeable than the learner in every sphere of the learner's operation, but only in specifically targeted areas (Stolle et al., 2019).

We both have a history of working within the Australian sports institute system, where we have observed and directly experienced the establishment of what can be seen as mutual critical friendships between coaches and other professionals, including sport scientists and administrators. Many of these relationships appear to have been highly efficacious in promoting coach learning in fields relevant to their vocation, while also affording the other professionals increased understanding of challenges associated with the practical implementation and utility of their disciplinary knowledge. We therefore believe that a program focused on creating and building appropriate critical friendships can provide a powerful means for coach learning and development. In that context it might be possible to establish some critical friendships as extensions of already existing relationships, but others would likely have to be contrived more in the spirit of an arranged marriage, meaning that there could be a requirement for a skilled "match-maker". It is envisaged that the Program Coordinator could oversee the match-making process, supported by input from other contributors to program delivery. The Program Coordinator could also be a critical friend to at least some of the developing coaches.

10.3.2. Communities of Practice

Since the early 1990s, much attention has been directed toward the significant contribution that social connections and interactions between practitioners can

make to informal learning. For example, Lave and Wenger (1991) proposed that "communities of practice" incorporating people at differing stages of career development, from expert to novice, can provide a powerful means for knowledge development and transfer. As outlined earlier in this paper, individuals progress within the community from "legitimate peripheral participation" to full acceptance as they demonstrate increases in their competencies and commitment to group objectives. Communities of practice often arise spontaneously through dialogue between practitioners interested in addressing similar workplace challenges. Their membership can be drawn from multiple different organisations, and their scope typically extends beyond any single project. It is argued that they are more than just professional networks since they are characterised by some form of joint endeavour with potential to yield benefit to both the community as a whole and its individual members.

Li, Grimshaw, Nielsen, Judd, Coyte, & Graham (2009) have noted that the original concept of communities of practice was closely aligned to apprenticeship models of learning, but that the concept has subsequently evolved, without achieving absolute clarity. In the late 1990s, Wenger (1998) characterised communities of practice as having three critical dimensions, which he termed mutual engagement, joint enterprise and shared repertoire, with the last of these entailing the use of common resources (such as practical guidelines and other documents) and jargon. He subsequently noted the importance of events, leadership, connectivity, membership, learning projects and artifacts to the successful operation of communities of practice. Multiple forms of leadership were considered necessary, including thought leadership, networking, documentation of practice, and coordination of community activities. These multiple forms could be vested in one or two people or could be more widely distributed.

In 2002, Wenger and colleagues (Wenger, McDermott, & Snyder, 2002) reconfigured the critical dimensions of communities of practice, naming them as domain, community, and practice. Domain related to the area of focus of the community and the competencies required to differentiate members from non-members. Community was seen as the social structure enabling interaction between members, and practice incorporated the shared repertoire. Additionally, Wenger et al. (2002) de-emphasised earlier notions concerning the spontaneous emergence of communities of practice by suggesting that communities could be deliberately established or fostered by businesses as a way of building staff knowledge and capabilities.

While there is continuing debate as to how communities of practice should be defined (Wenger, 1998), there have been reports of the operation of such communities in various fields (Lesser & Storck, 2001; Corso, Giacobbe, & Martini, 2009), and there is widespread agreement that they can be powerful vehicles for accomplishing learning (Allee, 2000; Lesser & Storck, 2001; Wenger et al., 2002; Corso et al., 2009). Intuitively, potential would seem to exist for building communities of practice as a means to advance the learning, development and pro-

fessional status of sports coaches. Several scholars have pointed out, however, that this is not a simple matter. Culver and Trudel (2008) reported three cases in which attempts to implement a community of practice met with limited success. In one of these, the community of practice initially appeared to be quite productive, with the coaches commenting positively on its benefits, but when a researcher who was also its facilitator withdrew from the facilitating role the community quickly ceased to operate. In the second case, a well-established hierarchy within the coaching group inhibited interaction, with lower-level coaches afforded almost no opportunity to meaningfully participate in discussions. The third case involved having several high-school sport coaches individually examine their coaching practices through reflective conversations with the others. It was hoped that this would lead to recognition of common issues that could be solved through collaboration. Although the process was seen by the coaches as valuable, it did not lead to a genuine community of practice, nor did it have any noticeable effect on their independent reflective abilities.

Rynne (2008) points out that most coaches operate in highly competitive environments that engender a mindset not conducive to the collaborative spirit typically regarded as requisite to communities of practice. He also identifies a risk that, unless carefully managed, communities of practice could become exclusive, insular, and resistant to positive change. He does note, though, that "constellations" of optimally functioning communities of practice have the potential to achieve coach learning outcomes that are not readily achievable through other approaches. He is attracted by the possibility that communities of practice could be instrumental in transforming sport cultures that historically have incorporated elements of racism, sexism and tolerance of violence.

Stoszkowski & Collins (2014) argue that the effectiveness of communities of practice in advancing coach learning and development might be maximised by requiring the members to undergo some component of formal education that would enable them to understand the ways in which their personal experiences have led them to adopt specific beliefs, principles and attitudes. It is hypothesised that this new understanding could increase willingness to discuss, consider and learn from the viewpoints of other coaches.

In general, the extant literature suggests that the development of dynamic communities of practice could be well worth pursuing in the coach learning context, provided that sufficient attention is given to the factors outlined above. An initiative of this type would be consistent with the social learning theory of Vygotsky (Tudge & Winterhoff, 1993), as briefly summarised earlier in this paper.

10.4. Step 4: Securing and Developing Resources Needed for Implementation of the Agreed Program

With agreement on the nature and components of the program in place, the next requirement would be to ensure the availability of resources needed to launch the program and support it. Included here could be the identification of pros-

pective critical friends for the coaches, and the development of a blueprint for creating and nurturing at least one appropriate community of practice. Attention could be given to the possibility of establishing separate communities of practice for coaches working with athletes having different motivations (i.e., Personal Well-being, Personally Referenced Excellence, or Elite Referenced Excellence—see first page of this paper). The Program Coordinator probably would have to be prepared to take on a major role in community of practice facilitation.

There would need to be access to funding for advertising and promoting the program, running events, producing documents and artifacts required for individual and/or communal coach learning, and perhaps recruitment of assistance from external experts. It would be important to have all the necessary resources in place before program launch.

10.5. Step 5: Engagement with Local Coaches and Generation of Interest

Having completed the above steps, the Program Coordinator (assisted by other coach developers identified in Step 2) would engage extensively with local coaches. Contact and communication strategies would have to be established and could include networking with sporting and other relevant organisations, information-sharing presentations at local sporting clubs, social media campaigns, and advertising at community centres. Based on advice from the organisation employing the Program Coordinator, some coaches may be targeted for direct contact. Attempts could be made to ensure representation of minority groups, females, and people with disabilities through implementation of purposely designed inclusive recruitment policies. The message to all potential candidates would be focused on the emergence of an opportunity for interested coaches to take part in an individually tailored program aimed at development of their domain and level specific coaching expertise. It is likely that the program would have wide appeal since coaching is a popular occupation. For example, Australian Bureau of Statistics data show that in 2004 almost 595,000 Australians aged 15 years and older (and representing 3.8% of the total population in that age bracket) performed the role of a coach, instructor, or sport teacher. Notably, ~77,000 of these coaches were contributing more than 10 hours of volunteer work per week (Australian Bureau of Statistics, 2005).

10.6. Step 6: Implementation of an Application Process That Promotes Inclusivity

In line with industry standards (Ball, Catanzariti, Drake-Brockman, Proctoer, Ruskin, & Walsh, 2013), candidates would be required to apply to take part in the program by submitting a brief letter or email outlining their experiences, reasons for applying, current role, coaching aspirations, educational history and a summary of what they hoped to obtain from their participation. The Program Coordinator would then liaise with the candidates to gain clearer understanding of their professional development needs. This would be a first step toward

co-design of the subsequent learning experience.

10.7. Step 7: Initial Screening of Candidates

Coaches seeking to take part in the program would be evaluated through a screening process resembling those used by sporting organisations to fast-track identified athletes into sports or sport programs where they have the potential to excel. However, the physical testing component of a traditional athlete screening process would be replaced with a range of purposely designed assessments aimed at increasing the likelihood that selected candidates would possess the desired characteristics, traits and abilities to succeed in a semi-autonomous approach to the organisation of learning (Kaufman, 2003). The aim here would be to establish current levels of competencies so that future progress could be mapped, recorded, and submitted as evidence to assist coaches when applying for higher levels of certification.

10.7.1. Overview of Screening Procedures

As part of the attempt to accurately rate performances, identify current levels of knowledge and determine overall suitability for the program, candidates would be required to complete a specially designed aptitude test and participate in several small group scenario-based training activities. Results from these exercises and the outcomes of the informal discussion with the Program Coordinator would be combined with information obtained from the application letters to help categorise the candidates.

10.8. Step 8: Categorisation of Candidates

The categorisation of candidates could be based on a framework such as that presented in Table 5 and Table 6 below. The Tables are based on the work of Berliner (1994) and Schempp et al. (2006) and provide an overview of the approach that would be used to help determine overall suitability, current levels of knowledge and stages of development.

Table 5. The first section of a coach categorisation framework that could be used to rate current levels of knowledge and work practices.

Stage of development	Description of current work practices
Initial stages of development (Guided responders)	**Coaches at this level…** • Tend to have little or no situational perception. • Spend a great deal of time enforcing rules. • Do not usually plan their training sessions. • Mostly use an ad hoc approach to session delivery. • Are still trying to establish routines so often believe things are out of control. • Make use of training drills that are mostly highly structured and ineffective. • Have little understanding of the theories that underpin the learning process so often blame athletes for a lack of athletic progression.

Continued

Intermediate stages of development (Effective adaptors)	**Coaches at this level…** • Tend to be more experienced than guided responders. • Tend to use more flexible work practices. • Generally cope better with the complex nature of a training environment. • Are capable of developing basic strategies and contingency plans (i.e., if this happens, then I do that). • Can generally appreciate bigger picture goals. • Have usually developed an appreciation toward planning. • Have started employing different approaches in an effort to facilitate more positive outcomes.
More advanced stages of development (Independent practitioners)	**Coaches at this level…** • Are generally much more experienced than guided responders and effective adaptors. • Have an ability to adapt some of their practices in response to a situation (reflection-in-action). • Are generally capable of developing quite complex individual strategic knowledge and contingency plans. • Usually have a full appreciation of the planning process. • Use gut feelings to make most decisions, but with varied results. • Tend to see situations more holistically by relating current concerns to bigger picture goals. • Are able to complete some tasks with automaticity and are capable of seeing deviations in displays of skills • Are generally able to monitor their own performances (reflection-on-action).

Table 6. The second section of the coach categorisation framework that could be used to initially categorise candidates according to their apparent capability for pursuing a semi-autonomous approach to learning.

Rating	Description
Highly capable	• The candidate appears to possess all the qualities required to be an effective semi-autonomous learner. • The candidate appears to possess all the characteristics and personal traits required to be a highly capable coach. • The candidate demonstrates enormous potential across all relevant areas. • No external issues are evident.
Capable	• The candidate appears to possess some of the qualities required to be an effective semi-autonomous learner. • The candidate appears to possess some of the characteristics and personal traits required to be a highly capable coach. • The candidate demonstrates potential in certain areas. • There are some minor external issues that could impede future development.
Could be capable	• The candidate does not yet possess many of the qualities required to be an effective semi-autonomous learner. • The candidate does not currently have many of the characteristics and personal traits required to be a highly capable coach. • The candidate demonstrates potential in certain areas. • Several external issues exist that could potentially impede future development.

10.9. Step 9: Grouping of Candidates

Depending on the number of expressions of interest in the coach develop-

ment program, the results of the categorisation process could be used to divide the candidates into two cohorts, both of which would be encouraged to participate in an on-line community of practice, with one also to undergo regular face-to-face interaction with one another, the Program Coordinator and critical friends.

Importantly, use of the above process would allow inclusion of all interested candidates, which would be ideal given that the categorisation would provide only a "snapshot" of the existing position of candidates in their learning journeys, and it is known that accomplished coaches continually acquire new knowledge throughout their careers (Ericsson & Charness, 1994; DeMarco & McCullick, 1997). Although the candidates selected into the face-to-face group would receive more intensive support, the others would still receive encouragement and support to continue development of their coaching expertise.

10.10. General Operational Model for the CLAD Program

While there are a number of different ways in which a CLAD program emphasising informal approaches to learning could operate, we favour use of a "collective action" approach (Marwell, Oliver, & Prahl, 1988) framed by a "continuous improvement philosophy" aimed at achieving the specific objective of encouraging, supporting and guiding the development of coaches through the provision of highly personalised and substantially self-directed learning journeys.

10.10.1. Promoting Continuous Improvement

Underpinned by the work of Lahy & Found (2015) and guided by the insights of Bessant & Francis (1999), the illustration below (**Figure 8**) demonstrates how a culture of continuous improvement and positive change could form the basis of an effective and efficient CLAD operational model. In a manner consistent with Kolb's experiential learning cycle, coaches and everyone else involved in the program would be encouraged to pursue constant improvement through repeated cycles of the five-stage sequence outlined in **Figure 8**.

10.10.2. Underpinning Theories, Concepts, Laws and Principles

The concepts, theories, laws and principles that would underpin the general operational model for the proposed CLAD program are summarised below.

1) The organisation focus principle

This principle is based on a belief that a specific and intentional focus on only a small number of objectives is often more productive, effective, and efficient than attempting to achieve a broad range of outcomes. Lahy & Found (2015), for example, argue that organisational members are much more likely to develop the strategies required for the achievement of objectives when there are minimal competing interests and fewer areas of focus. This suggests that in the present case a single focus on a clear objective could be a successful strategy.

2) The quality over quantity principle

Adapted from the Schmenner & Swink (1998) theory of operation, this principle implies that organisational performance (as defined by an organisation's

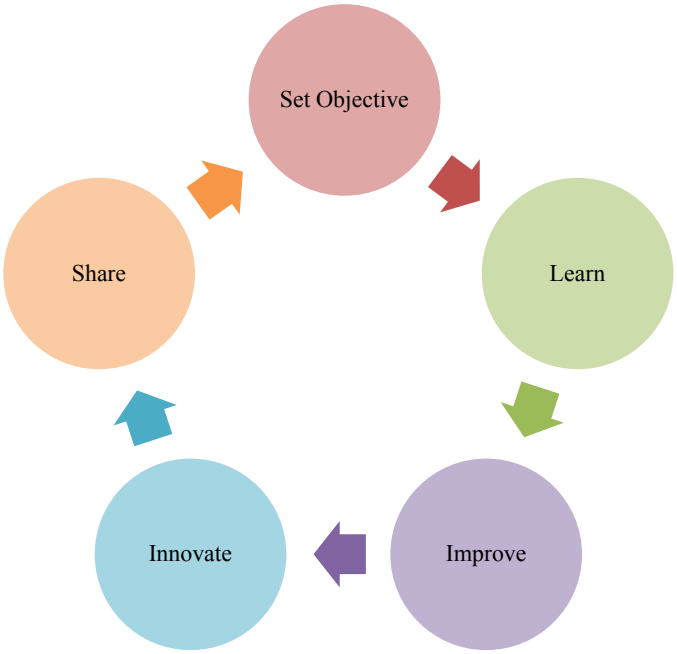


Figure 8. Schematic representation demonstrating how repeated cycles of setting objectives, learning, improving, innovating, and sharing could form the basis of a highly effective and efficient CLAD operational model.

ability to meet its objectives) is enhanced when quality improves and waste declines (Schmenner & Swink, 1998). While it is hoped that all the theories and strategies underpinning the proposed initiative would help to achieve the overall goal, enhancement of coach performance through outlining clear expectations, utilising the inputs of various experts, and implementing specifically designed daily, weekly and monthly activity strategies could be instrumental in developing a continuous improvement culture.

3) The experience curve effect

The experience curve effect describes how the coaches will naturally improve over time as they become more experienced and proficient with a range of job-specific tasks (i.e., an investment in effort can often produce gains in efficiency) (Bessant & Francis, 1999; Lahy & Found, 2015). Attempts would be made to accelerate this process and accomplish positive change through initiatives outlined in the following sections.

4) The contiguity and cumulative capability factor

This notion here is that new approaches must be constantly developed and applied for performance to continuously improve. According to Lahy & Found (2015), the likelihood that a designated organisational outcome will be achieved is greatly increased when ideas for the development of new approaches are sourced from people with different skills, backgrounds and experiences. This concept is integral to the model proposed in this paper.

5) The law of diminishing returns

The law of diminishing returns relates to situations where the allocation of

substantial additional time, effort and resources results in only a relatively small increase in output (Schmenner & Swink, 1998). It is for this reason that improvement rates usually follow a rising sinusoidal trajectory (Lahy & Found, 2015). The law is salient to the proposed work since it implies that improvement is not usually a linear process and that new ideas will be constantly required to stimulate cycles of advancement following plateaus.

10.11. Ensuring Clarity of Expectations, Roles and Responsibilities

It would be vital for everyone involved with the program to have a clear understanding of their roles, responsibilities and expected behaviours. Written specifications could be helpful in achieving this and could be developed by taking account of the points presented below.

10.11.1. The Developing Coaches

Coaches taking part in the program would be expected to:

- Take substantial responsibility for their own learning and development.
- Try to customise the learning process to fit in with their own goals and needs.
- Develop and implement action plans aimed at achieving realistic goals.
- Actively participate in all agreed learning activities.
- Endeavour to monitor their own progress and help other learners.
- Work towards sustained and continuous improvement.
- Commit to all meetings and appointments.
- Be respectful to others.
- Be proactive in asking for help and support where needed.

10.11.2. The Program Coordinator

The Program Coordinator would be required to oversee all aspects of the planning and implementation process and would need both high levels of technical know-how and first-hand knowledge of tasks assigned to the program participants. Duties would include analysing and managing project risks, developing budget management plans, monitoring participant progress, ensuring compliance with timelines, overseeing other administration tasks, and constantly communicating with other team members and key stakeholders to keep everyone updated and well-informed.

Because of his/her extensive background in coaching, the Program Coordinator would also work directly with the coaches and attempt to aid their development by:

- Establishing positive and meaningful relationships.
- Creating a culture where learning is highly valued.
- Cultivating welcoming learning environments.
- Assisting with the development of individual goals and action plans.
- Playing an active role at learning/training and development sessions.
- Being a critical friend to some of the coaches and liaising with other critical

friends.

- Facilitating the development of a coaching community of practice (or perhaps several communities of practice).

10.11.3. Critical Friends

It would be vital for potential critical friends of coaches to understand the overarching rules of engagement. They would need to realise that they should strive to:

- Encourage continual coach learning.
- Be a sounding board for new ideas and work practices.
- Promote opportunities for personal growth of the coaches.
- Engage in regular dialogue with the coaches (formal face-to-face discussions, video calls, informal catchups, emails, Zoom, etc).
- Support and encourage reflective practice.
- Provide support to the coaches when the going gets tough.

Equally, it would be important for critical friends to be aware that they should not:

- Judge or undermine the authority of others.
- Impose their own agendas and/or offer "quick fixes".
- Presume to know more than the coaches about a coaching situation (Bambino, 2002; Baskerville & Goldblatt, 2009).

10.12. General Structure of the CLAD Program

We suggest that for each coach the CLAD program could run over a twelve-month period, with the design based on information obtained from the initial screening process. We envisage that there could be (for example) an initial two-day administration period followed by twelve months of intensive guidance and support. At the end of the twelve-month period, however, attempts would be made to keep the group together by offering a range of options designed to encourage members to stay connected.

10.12.1. Initial Two-Day Period

During the initial two-day period (conducted over a weekend), attention would be focused primarily on the formation of positive connections and the development of authentic and meaningful relationships (**Table 7**). Important administrative tasks, along with several learner-centred informal learning sessions, also would be undertaken.

10.12.2. Additional Twelve-Month Period

Over the remaining twelve-month period, all coaches would participate in facilitated activities designed to establish at least one functional community of practice.

The activities would include on-line discussions, catch-ups and webinars involving all members of the team. For the cohort selected for intensive face-to-face interaction, informal and highly personalised learning activities guided by inputs

Table 7. A summary of the key outcomes that could be achieved during the initial two day period. These outcomes relate to all team members, not just the coaches.

Formation of a positive and highly motivated learning community	Development of individualised action plans	Completion of all administrative tasks
This key outcome could be achieved by…	This key outcome could be achieved by…	This key outcome could be achieved by…
Creating a highly positive and supportive environment that promotes a sense of belonging and encourages independence and self-motivation.	Using a narrative psychology approach (i.e., the way humans deal with experiences by constructing stories and listening to the stories of others) to prepare strategies for the achievement of personal goals (Schiff, 2012).	Staging a group Q&A session that covered a range of topics including the purpose of the program, ethical considerations, legal responsibilities, and the potential risks and benefits associated with participation.
Building and/or reinforcing coach self-efficacy and self-worth by reframing explanations in ways that motivate persistence through the use of a "feed forward" approach (i.e., explaining to members what you would like them to achieve, instead of telling them what you don't want them to do) (Ste-Marie, Vertes, Rymal, & Martini, 2011).	Providing choice and autonomy regarding goal setting.	Signing of image release forms, waivers and agreements.
Connecting the coaches, key stakeholders and critical friends to the work, thereby creating a sense of collaboration that is more likely to favour the willingness of all members to express their thoughts and share ideas.	Developing strategies to deal with potential external concerns and barriers to program adherence.	Uploading personal data (e.g., contact details, dates-of-birth, addresses, next-of-kin and emergency contact details, medical conditions/ concerns, etc.) to the program's data storage unit.
	Offering different perspectives and experiences when identifying milestones to ensure they are both realistic and attainable.	Developing individual interaction strategies and communication models.
		Having technological support measures in place.

from the Program Coordinator and based on each coach's identified areas of focus would be conducted at the coaches' own training sessions, which ideally would be attended also by critical friends.

Through the on-line and field sessions a broad range of topics aimed at enhancing the planning, delivery and management skills of coaches could be covered, including humanistic coaching, athlete safety and wellbeing, the importance of providing culturally safe standards of care to athletes from different ethnic and cultural backgrounds, holistic approaches to athlete development, skill development, coaching philosophies, effective communication, delivery of training sessions, and the importance of critical reflection. An overview of some of the skills that could be addressed is presented in Table 8.

Additional procedures aimed at accelerating learning and positive change also would be undertaken, such as arranging for the coaches to attend and observe training sessions conducted by others, talk informally with elite-level coaches, and take part in selected workshops and presentations.

While the above concentrates on the potential positive outcomes that could occur during a twelve-month period, there would inevitably be a need to deal with some negative occurrences with voluntary withdrawals from the program among the most serious of these. Even with substantial advance planning, the development of highly personalised action plans, and the extensive and constant support of a wide range of people with considerable experience and expertise, the outcomes would likely differ between individuals.

10.13. Examining the Overall Value of the Program

Continual evaluation of the program would be essential as a basis for continual

Table 8. Overview of some skills that could be targeted through regular, informal on-line discussions and highly personalised face-to-face learning activities over the twelve-month period.

Planning Skills	Delivery Skills	Management Skills
Goal setting. Session planning. Program planning. Competition scheduling. Contingency planning (Lyle, 2002).	Problem solving skills. Motivational skills. Presentation skills. Communication skills. Relationship building skills. Decision-making skills. Intrapersonal skills (Lyle, 2002).	Administrative skills. Budget management skills. Interpersonal skills. Strategic planning skills. Event/Competition management skills (Lyle, 2002).

refinement and improvement. It is proposed that this could be conducted using the "value creation framework" of Wenger, Trayner, & de Laat (2011), since this framework offers a means to assess outcomes in ways extending beyond just statistics on program completions.

10.13.1. General Outline of the Value Creation Framework

Wenger et al. (2011) developed the value creation framework with the intention of providing an effective tool to help individuals and organisations measure the value they generate from participating in communities of practice. According to these authors, positive outcomes are achieved from these endeavours when there is a willingness of members to acknowledge each other as sources of valuable knowledge, when everyone involved with the initiative is considered a collaborator and key contributor, and when people from different backgrounds work together to advance learning within a particular domain.

Over time, the individual experiences, personal stories, and different perspectives that make up these shared endeavours become a valuable learning resource with multiple benefits and different forms of value, as indicated below (Wenger et al., 2011).

Immediate value: Members of a joint endeavour can often gain an immediate value through their participation because the interactions and activities have value in themselves (Wenger et al., 2011).

Potential value: In some cases, the activities and interactions can produce benefits that are not realised immediately but stored as potential value in the form of knowledge capital. This type of capital can be further divided into five categories: personal assets (human capital), relationships and connections (social capital), resources (tangible capital), collective intangible assets (reputational capital), and transformed ability to learn (learning capital) (Wenger et al., 2011).

Applied value: Because potential value is not always used, applied value is only generated when new learning has been applied to a specific situation and/or task. This alone, however, does not guarantee an improvement in performance and critical reflection is required to understand the effects of the introduction of new knowledge on work practices in order for the potential value to be realised (Wenger et al., 2011).

Realised value: Implicit here is an understanding of the ways in which the application of potential value (in the form of a type of knowledge capital) to a particular task results in an improvement in performance or the achievement of a specific goal (Wenger et al., 2011).

Reframing value: This final form of value occurs when the original objective and/or definition of success is redefined. It can include both individual and organisational goals but attempting to redefine organisational success is likely to cause hierarchical tensions requiring careful negotiation with high-level managerial staff. One method for resolving these tensions is to establish a sub-program that has new objectives that are separate from but complementary to those of the main program, which (at least temporarily) continues to operate as initially planned (Wenger et al., 2011).

A schematic overview of the Value Creation Framework is presented in **Figure 9**.

10.13.2. Summary of Value That Could Be Created by Participation in the CLAD Program

The following provides a brief summary of the benefits that could arise from the proposed CLAD program and the different ways in which the value of the program could be measured.

Immediate value could be demonstrated by a range of positive and mutually beneficial interactions and activities, including:

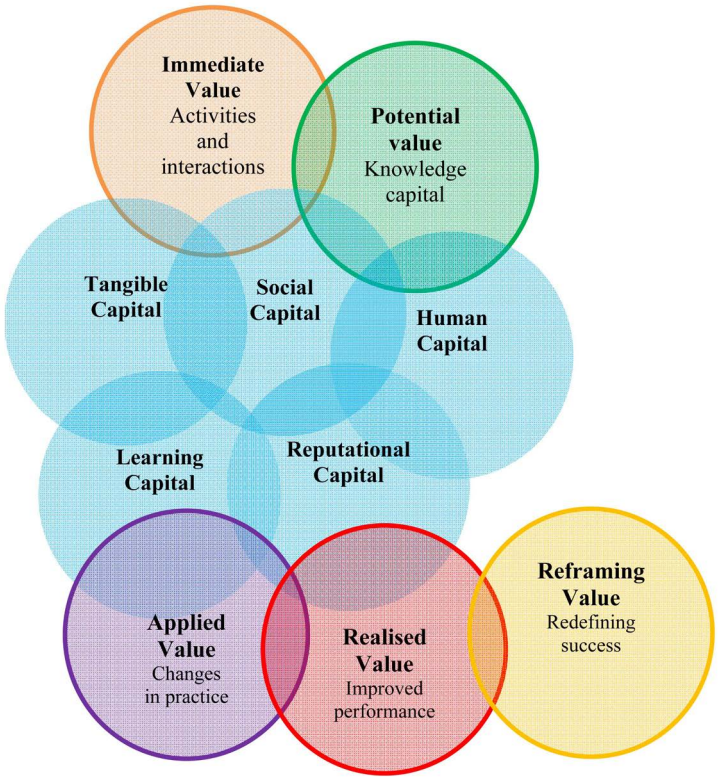


Figure 9. Schematic overview of the various types of value that can be produced through an initiative, as identified in Wenger's Value Creation Framework.

- Members helping each other on a regular basis.
- Members offering a range of different perspectives through regular dialogue.
- Members openly sharing personal experiences and stories.
- Members engaging in regular online and face-to-face discussions.

While these interactions and activities have value in themselves and would almost certainly aid the development of coaches, it is likely that they would also yield other benefits. Some of these, like the formation of new friendship groups, may emerge quite rapidly, while the potential for other benefits may not be realised until later in the program, as can be seen in the following examples.

Personal assets (Human capital): Stemming mostly from regular online and face-to-face discussions and as a result of coach interactions with More Knowledgeable Others, this form of capital could emerge as a key to development of new strategies to help deal with recurring issues or challenges. In the context of the program, human capital could also emerge as a new coaching skill or in the shape of important personal traits demonstrated by acts of kindness and compassion. This is important, since it has been reported that participation in collaborative projects can sometimes result in a reawakening of former professional identity (Wenger et al., 2011).

Relationships and connections (Social capital): Because the knowledge generated through the proposed program would be mostly socially constructed (Wenger et al., 2011), the relationships and various connections generated could be considered a valuable source of capital. For instance, if strong friendship bonds were established and there was a general perception amongst members that they were valued, respected and important, it is likely that positive interpersonal risks (such as trying something new and openly sharing thoughts) would be facilitated (Edmondson & Lei, 2014). This in turn, would assist with the development of new ideas and the creation of new improvement cycles.

Resources (Tangible capital): All participants in the proposed initiative would have the opportunity to engage in activities that could enhance their access to this form of capital, which would include information from journal articles, conference papers, topic-specific blogs and Vlogs, weekly news updates, video footage of group training sessions, participation in online information-sharing forums and sharing of links and references to relevant online stories and/or news items.

Collective intangible assets (Reputational capital): This form of capital could stem from formal recognition of the program and its host institution, and/or from an acknowledgement of the innovative approach to coach development.

For example, it is possible that a group of highly committed people from diverse backgrounds with access to a wide range of media networks would have had an ability to significantly increase the awareness of the initiative through sharing of stories and reporting of outcomes as part of a deliberate and collective-action approach to project promotion.

Transformed ability to learn (Learning capital): The emergence of learning capital from the envisaged program could occur from perceptions that the socially constructed and situational-based approaches to learning were highly positive and beneficial. For instance, if some participants saw merit in the use of this approach to learning as opposed to the more formal and direct teaching and instructional methods, it is highly possible that the approach would be adapted and applied to future situations and problems (von Glasersfeld, 1995).

Because knowledge capital has potential value that may or may not be used, **applied value** would only materialise in the program once a part or all the capital was employed to meet the demands of a relevant task. A coach using new knowledge to redevelop a session plan or adapt a training drill with the aim of obtaining a better outcome is an example of how potential value could become applied. As noted above, however, application of knowledge does not automatically result in an improvement in performance or the achievement of a new goal. Instead, a thorough understanding of how the application of the new knowledge affects current work practices is required before its potential is fully realised.

It is only when the value of the applied knowledge is fully understood that realised value occurs (Wenger et al., 2011).

Reframing value could emerge if, for example, the program was found to be particularly effective for coaches working within the developmental sector of sport and a decision was taken to concentrate on that particular area in the future. The new focus could then result in redefinition of the original objective and/or the markers of success (Wenger et al., 2011).

10.13.3. Interpretation of Value Creation Measures

Although the above highlights the different ways in which benefits arising from the proposed initiative could be measured, it is important to understand that a hierarchy of levels does not exist in the value creation framework and that one form of value will not automatically lead to another. According to Wenger et al. (2011), this is because learning, like performance, is a non-linear and dynamic process with distinct phases of knowledge production and the subsequent application of that knowledge. These authors also contend that in order to appreciate the multiple benefits of collaborative efforts, value should be considered the product of independently operating learning cycles that are capable of producing enormous benefits in their own right, and consequently may not necessarily have to come together in order for successful outcomes to be achieved (Wenger et al., 2011).

The true success of the proposed program should not therefore be determined by whether it reached the final cycle (reframing value), but on the quality of outcomes created by each separate learning cycle.

10.14. Reporting Outcomes

An important aspect of the twelve-month program would be the analysis of data and subsequent presentation of resultant information at various stages of the

project.

Wenger et al. (2011) suggest that a qualitative approach to this task is not only suitable for the purpose, but perhaps more effective for recounting "value creation stories". In the present context, an attempt could be made to provide multiple stories to ensure comprehensive reporting. The stories could have the following forms:

- **Good news stories:** Stories about the different values the program has created.
- **Leadership stories:** Personal narratives about leaders in the program.
- **Sponsorship stories:** Stories about sponsors of the program.
- **Stories of the initiative:** Stories about the program itself.
- **Stories of achievement:** Stories reflecting how participation in the program led to the attainment of new micro-credentials and the subsequent certification of higher levels of accreditation.

10.15. Staying Connected

At the end of the twelve-month period, attempts would be made to continue the work and keep the group together by offering members a range of options designed to encourage them to stay connected. The intention would be based not only on a desire to continue supporting, encouraging, and assisting coaches with their learning journeys, but also on an aspiration to contribute to the overall health and well-being of all group members. Studies have shown that regular participation in highly supportive and encouraging social activities can yield important positive physiological responses, including cardiovascular reactivity to both anticipated and existing stressors (Glynn, Christenfeld, & Gerin, 1999), while also yielding immune, endocrine, and cardiovascular function benefits (Uchino, 2006). Social interactions have been shown to reduce allostatic loads—"the cumulative wear and tear on the body due to adapting to adverse physical or psychosocial situations" (McEwen, 2000) and to promote high levels of psychological well-being by fostering a sense of relatedness and giving purpose to a person's life (Thoits, 1995; Cohen, 2004; Hudson, 2017). Additionally, there is compelling evidence linking a lack of engagement in quality social activities with a host of negative health conditions, including development and progression of cardiovascular disease, high blood pressure, recurrent myocardial infarction, delayed wound healing and impaired immune function (Thoits, 1995; Robles & Kiecolt-Glaser, 2003; Ertel, Glymour, & Berkman, 2009; Hudson, 2017).

The above makes it clear that providing members with highly positive and rewarding social experiences is not only imperative for the promotion of continuous learning and development opportunities, but for the overall health and wellbeing of group members. Retention of social and professional connectedness after the twelve-month program could be achieved by giving members the opportunity to:

- Attend regular "keep in touch" days and other social events.

- Continue receiving email correspondence aimed at their professional development.
- Continue sharing their stories on the program's social media pages.
- Continue engaging with each other through regular face-to-face and online catchups.
- Assist with the running of additional CLAD programs.
- Work together on other projects.
- Attend training sessions, workshops and conferences together.

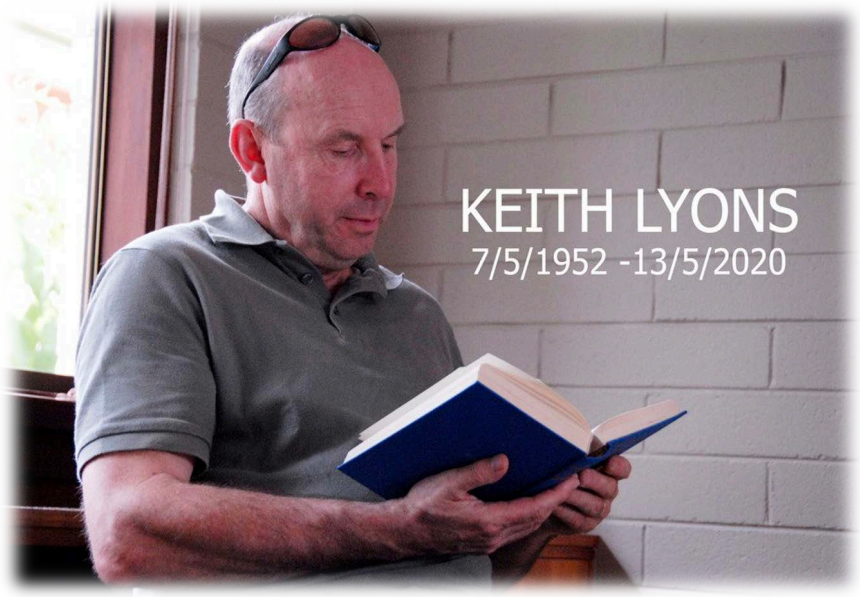
Additionally, friendships formed through the program could cause members to use personal networks to support any group members encountering professional and/or personal problems.

11. Concluding Thoughts

Available research evidence provides a strong rationale for design and implementation of coach education programs incorporating substantial opportunities for informal learning. Existing structures for delivery of coach education may need to be adapted to cater for such programs. Although this presents considerable challenges, the benefits to sport and to coaching as a vocation could be extensive. To positively influence the quality of coaching across the whole spectrum of sport, there is a need to conceive and experiment with new approaches based on emerging evidence, ideas and trends. The recent escalation in the development and uptake of video communication technologies for educational purposes is opening up new opportunities for connecting coaches with one another and with relevant external expertise. This could prove to be a major aid to reflective practice and experiential learning. Attention will need to be given to the issue of how informal learning accomplished by coaches can be appropriately recognised. It will become increasingly important to take account of the fact that coaching is a "broad church", and that many coaches who are essential to the very fabric of sport are not primarily focused on achieving high-performance outcomes. Education programs for these latter coaches will need to be specifically tailored and promoted. For some areas of coaching, it may even be worthwhile to consider engaging talent from other sectors through a "talent transfer" process resembling that sometimes employed to move athletes from one sport to another. This process could be structured to ensure that the recruits brought salient (formal and/or informal) education with them and could serve as an inspiration for existing coaches. Regardless of the exact nature of any new operational model, success will depend on the willingness of key personnel from multiple organisations to contribute.

Dedication

This paper is dedicated to the memory of Professor Keith Lyons, a wonderful mentor, confidant and friend who always provided great advice, wisdom and genuine care when it was most needed.



"Let us be grateful to the people who make us happy; they are the charming gardeners who make our souls blossom."—Marcel Proust

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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