Coaches’ Perspectives of the Continuing Coach Education Program in the Development of Quality Coach Education in Singapore

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Continuing professional development is considered essential to the improvement of sport coaching standards through the development of coaches’ knowledge. To support continuing professional development participation and learning for Singapore coaches, the Continuing Coach Education (CCE) program was introduced by Sport Singapore. The present study examined the influence of the Continuing Coach Education program on Level 1 Singapore-based coaches registered under the National Registry of Coaches. Utilizing an explanatory sequential quantitative–qualitative mixed methods approach to enhance understanding of participants’ perceptions, National Registry of Coaches Level 1 coaches completed an online questionnaire (n = 124) and participated in a semistructured interview (n = 7). Results revealed: (a) that intrapersonal knowledge was valued over professional and interpersonal knowledge; (b) that holistic development with an emphasis on character development of athletes was valued; (c) coaches’ key learning needs (i.e., sport psychology, use of technology in coaching, and career planning and development); (d) a preference to experience various learning sources (i.e., collaborative, experientially driven, recognized mediated, and internal unmediated), specific learning sources (i.e., self-directed and guided experiential), and improved coach developer facilitation; and (e) main learning motivations (i.e., meeting requirements and content relevance) and barriers (i.e., time and cost). Possible strategies to promote continuing professional development participation and learning for coaches practicing in similar contexts are discussed.

Keywords: coach development, coach learning, professional development, coaching effectiveness, sport coaching

Providing initial coach education and coach development programs is essential to improving the quality of sport coaching (Cushion et al., 2010; Nelson et al., 2006; Trudel et al., 2010). Recognizing the need to encourage coaches to embark on both certification and continuing professional development (CPD), some national sport governing bodies around the world have designed a coach development pathway for coaches to certify and maintain their accreditation status (Nelson et al., 2013; Trudel et al., 2010). However, it has been suggested that CPD programs should be reviewed as they are often ineffective in the development of coaching knowledge (Griffiths et al., 2018; Nash et al., 2017). As coaching practice occurs in a dynamic environment that requires specific knowledge to guide a coach’s practice to operate effectively within their context (e.g., recreational, developmental, elite; Trudel & Gilbert, 2006), the design and content of CPD programs should be guided by a more nuanced understanding of coaching effectiveness (Cushion et al., 2010; Stodter & Cushion, 2017).

The pursuit to understand coaching effectiveness has prompted scholars to conduct studies in various contexts (e.g., Côté & Sedgwick, 2003; Vella et al., 2013). After examining 30 years of literature, Côté and Gilbert (2009) proposed an integrative definition of coaching effectiveness—suggesting three areas of coaching knowledge (professional, interpersonal, and intrapersonal) in the development of four athlete outcomes (competence, confidence, connection, and character) regardless of context. This definition has been used as a framework for research in various contexts, such as youth athlete development (Côté et al., 2016; Holt et al., 2017) and coach education (Araya et al., 2015; Vella et al., 2013). However, previous studies have mainly examined effective coaching and coach learning within the context of elite (professional club, Olympic) and subelite (youth competitive) levels (Abraham et al., 2006; Araya et al., 2015; Côté & Sedgwick, 2003; Gilbert & Trudel, 2001; Jones et al., 2003). This limits our understanding of how CPD can be designed for the “focused development” (Abraham et al., 2006, p. 562) of knowledge in coaches who practice in nonelite (recreational) settings (Trudel & Gilbert, 2006). Specifically, in organizing coaching sessions, recreational coaches would tend to plan for activities that would contribute toward participation outcomes such as sport involvement, sport enjoyment, socialization, and healthy well-being (Lyle, 2002). In contrast to elite settings, where coaches practice in a highly structured and competitive environment, which require intensive preparation and involvement by both coaches and their athletes (e.g., Collins & Kiely, 2022), coaching sessions would focus on achieving performance-related outcomes (e.g., winning at competitions; Lyle, 2002). This suggests that for coaches’ learning needs to be met, CPD provided for elite coaching should be different from that provided for coaches operating in nonelite contexts (Walker et al., 2018). For example, in enhancing athlete performance, the knowledge of performance analysis (professional) and ability to effectively communicate (interpersonal) key points from the analysis to their athlete(s) is essential for elite coaches (e.g., O’Donoghue & Mayes, 2013). Conversely, CPD content that would be more relevant for nonelite coaches to promote social skills in their athletes would be knowledge in fundamental movement skills (professional) and knowledge to effectively interact with parents (interpersonal) to be part of their child’s development (e.g., Abraham et al., 2022; Koh et al., 2017). To this end, for CPD to be valuable and relevant for coaches, a
coaches’ context should be taken into consideration in the design and delivery of CPD programs.

Although recent studies have explored appropriate coach education for novice coaches (e.g., Walsh & Carson, 2019; Webb & Leeder, 2022), it appears that the current provision of coach education and CPD programs for this cohort could be further improved by adopting a more consistent approach in program design (Walsh & Carson, 2019) and promoting critical thinking skills of learners (Webb & Leeder, 2022). Moreover, research examining coaches’ perceptions of coach education in other contexts has highlighted a number of criticisms, such as the lack of an engaging learning environment (Cushion et al., 2010), inability to meet learning preferences (Erickson et al., 2008), resistance to content taught (Nelson et al., 2013; Stodter & Cushion, 2017), lack of contextualization of content (Griffiths et al., 2018; Nash & Sproule, 2012), ineffective assessments (Nash & Sproule, 2012), and inappropriate timing of class activities (Araya et al., 2015). These negative perceptions demonstrate that more effort is required in the design of CPD programs to improve the learning experiences of coaches.

Coach education research has widely indicated that coaches acquire knowledge through formal, nonformal, and informal means (Mallett et al., 2009; Nelson et al., 2006). Although some studies suggest that informal sources have greater learning value (Culver et al., 2019; Koh, Bloom, et al., 2014; Maclean & Lorimer, 2016; Van Woezik et al., 2021), other studies contend that both nonformal (e.g., Armour, 2010) and formal (Araya et al., 2015; Vella et al., 2013) sources have merit as well. The main argument that informal sources of learning have greater impact on a coaches’ knowledge is that it addresses the unique coaching issues relevant to a coach’s context (Cushion et al., 2010). For example, communities of practice sessions appreciate coach learning as a social process (e.g., Stoszkowski & Collins, 2014; Van Woezik et al., 2021) that allows the cocreation of knowledge and sharing of experiences that would be applicable to the coaches’ practice within their context (Culver et al., 2019). Key benefits of communities of practice reported by coaches were that they provided them the opportunity to network with more experienced coaches, to acquire knowledge from others that was more relevant to improve athlete performance in their context, and to hone their interpersonal and intrapersonal coaching knowledge during interactive and reflective activities (Araya et al., 2015; Culver et al., 2019).

Although it should be acknowledged that nonformal and informal sources contribute toward the majority of coaches’ learning experiences (Mallett et al., 2009; Walker et al., 2018), formal sources provide an important foundation for novice coaches to practice competently and further develop their knowledge when they are “open-minded” (Stodter & Cushion, 2017, p. 333) toward coach learning. In essence, how the coach learner would “understand and construct new knowledge” (Webb & Leeder, 2022, p. 3) from their learning experience is “filtered” (Stodter & Cushion, 2017, p. 323) by the coaches’ biography (existing knowledge, past experiences, beliefs, and dispositions). Consequently, regardless of learning source, coach learning may only be effective when learning experiences are perceived by individual coaches as contextually and practically relevant (Stodter & Cushion, 2017).

In alignment with constructivist principles, it is suggested that CPD programs utilize a range of teaching strategies that place coaches at the center of learning (Ciampolini et al., 2019; Paquette & Trudel, 2018; Vella et al., 2013). Some of these strategies used in coach education include experiential learning (Vella et al., 2013), role-play (Araya et al., 2015), and self-paced online learning (Driska & Nalepa, 2019). Learner-centered strategies consider the coaches as autonomous learners and tend to prioritize the quality of coaches’ learning compared with the more traditional didactic methods that emphasize the quality of instruction by coach developers (Armour, 2010; Paquette & Trudel, 2018). This is achieved when coach developers utilize strategies to create autonomy-supportive (Ryan & Deci, 2000) environments for coach learners to self-regulate and meaningfully represent their learning (Moon, 2004). Coaches have reported that for them to be engaged in learning, it is essential that activities are experientially based (Gilbert & Trudel, 2001; Vella et al., 2013), are interactive (Araya et al., 2015; Ciampolini et al., 2019; Van Woezik et al., 2021), and involve reflection (Araya et al., 2015; Ciampolini et al., 2019; Nash & Sproule, 2012; Trudel et al., 2015). Furthermore, recognizing that the quality of coach developers’ facilitation would have a strong influence on the outcome of CPD programs, some scholars argue that quality coach developer training is necessary to equip coach developers with the skills and knowledge to design and facilitate effective learner-centered activities (Stodter & Cushion, 2019; Trudel et al., 2013; Walters et al., 2019). This would encourage coach developers to draw upon the existing knowledge of their learners (Callary & Gearing, 2019), deliver more context-driven, as opposed to content-driven, CPD programs for their coaches (Walsh & Carson, 2019; Walters et al., 2019), and encourage coaches to critically examine the content taught at CPD programs (Stodter & Cushion 2019; Webb & Leeder, 2022). When CPD programs are conducted in a manner that ignores a coaches’ biography, it may “enable or inhibit” (Webb & Leeder, 2022, p. 628) or “both constrain and liberate a coaches’ development” (Stoszkowski & Collins, 2014, p. 782) as coaches may be susceptible to nonjudgmentally accepting new knowledge as (in)effective toward their practice or (un)knowingly conform to desired standards espoused by stakeholders (e.g., coach developers, CPD bodies, and sport governing bodies; Webb & Leeder, 2022). Hence, some scholars contend that coach developers must be prepared to engage a wide range of coaches of various biographies for learners to consider assimilating what they have learned at CPD into their practice (Stodter & Cushion 2019; Trudel et al., 2013). Indeed, Stoszkowski and Collins (2014) pointed out that the greatest challenge that coach developers face in influencing coaches’ development of new knowledge is when coaches hold existing “inappropriate beliefs” (p. 783) of coaching. These findings have perhaps prompted some sport governing bodies around the world to provide coach developer training that is, unfortunately, informed by a dearth of research evidence (Cushion et al., 2019; Callary & Gearing, 2019). To this end, although the learning sciences have shed some insights into how coaches learn and have subsequently provided recommendations on the design of CPD programs, more research is required to validate these claims (Paquette & Trudel, 2018; Stodter & Cushion, 2017).

Studies have suggested the need to encourage coaches to have the intrinsic desire to develop themselves professionally (Griffiths et al., 2018; Nash et al., 2017). Specifically, these studies highlight that for CPD to be effective, the learning needs, preferences, motivations, and challenges of coaches should be considered. However, a lack of support for coaches (e.g., cost, time, inconvenience, and content irrelevance) has been identified as a barrier to CPD participation (Maclean & Lorimer, 2016; Vargas-Tonsing, 2007). Conversely, key motivations to CPD participation are relevance of learning content and meeting CPD accreditation requirements (Kubayi et al., 2016; Vargas-Tonsing, 2007). According to Nelson et al. (2013), coaches’ perceptions of CPD content irrelevance may be a result of a “disjunctur” (p. 216).
between what is perceived as important by the CPD provider and the coaches’ needs. Indeed, Driska and Nalepa (2019) argued that the content provided at CPD programs must be relevant to a coach’s context for the program to be “persuasive” (p. 173) and, subsequently, positively influence their attitudes toward CPD learning. Hence, for CPD learning to be effective for coaches, coaches must be willing to continually develop themselves while a CPD structure that engenders self-responsibility in learning is provided (Trude et al., 2010). To facilitate this, scholars advocate a clear and coherent CPD structure that has the flexibility to cater to specific learning needs of coaches operating at various levels and contexts (Nash et al., 2017).

Although the coach education literature has provided some insights into the design and content of CPD programs for sport coaches, it has been argued that further research is needed to develop a deeper understanding of this burgeoning field (Griffiths et al., 2018; Nash et al., 2017). What is unclear are the practical insights from coaches practicing in nonelite contexts about their needs, preferences, motivations, and challenges toward CPD participation and learning.

Continuing Coach Education Program—CPD for Singapore Coaches

The professional development of Singapore-based coaches is guided by a CPD structure that is consistent across all sports (Sport Singapore, 2021). Under the Singapore Coach Excellence (SG-Coach) development framework, following formal coach education courses that cover three main learning components (sports science, theory, and technical), accredited coaches are required to undergo professional development through the Continuing Coach Education (CCE) program to meet membership requirements under the professional registry (National Registry Of Coaches [NROC]). Within a 3-year period, NROC coaches must complete a minimum number of learning hours (CCE hours) through nonformal and informal sources (CCE activities). For example, an NROC Level 1 coach must complete a total of 30 professional development hours: 15 hr of coaching practice activities, 12 hr of coach education (attendance) activities, and 3 hr of coach education (self-guided) activities. Upon completion of CCE activities and, subsequently, fulfillment of CCE hours, coaches are required to update their personal coaching e-log book as a common point of reference for a coach’s eligibility to renew their NROC membership before its expiry (Sport Singapore, 2021).

Recent research involving Singapore coaches and various aspects of coach development provided some suggestions toward improving the current SG-Coach development framework. Suggestions included greater application of coaching theory to practice (Koh & Chew, 2015), implementation of values training (Koh et al., 2017), utilization of mentoring and critical reflection of coaching experiences (Koh, Bloom, et al., 2014), and promotion of self-directed learning (Koh et al., 2018). Consequently, Sport Singapore has established an academy for Singapore coaches (CoachSG) and has initiated a few programs (e.g., structured mentoring program for coaches, coach developer program) to advance coach development (International Council of Coaching Excellence, 2021; Sport Singapore, 2017). However, the effectiveness of these developments has not been rigorously examined, and given that Singapore coaches practice in an environment where school coaching is in high demand (Koh, Foo, et al., 2014), more research is required to better inform the current effectiveness of CCE activities. This supports the International Council for Coaching Excellence (ICCE) assertion that a periodic evaluation should be conducted on coach education programs to keep abreast of good coaching practices (International Council of Coaching Excellence, 2013).

Purpose of Study

The purpose of this study was to examine the NROC Level 1 coaches’: (a) perceptions of effective coaching, (b) learning experiences from recently completed CCE activities (i.e., coaching practice, coach education [attendance], and coach education [self-guided]), (c) learning needs and preferences (sources of learning), and (d) motivations and challenges to participation in CCE activities. Findings from this cross-sectional study will provide important insights into the coaches’ attitudes toward the CCE program and highlight possible strategies to improve the current CCE program design. It is also desired that the findings from this study will contribute to the coach education literature, which may, subsequently, better inform CPD bodies in the design of their own programs.

Method

A mixed methods approach was selected as it enabled more comprehensive insights into the coaches’ perceptions to better answer the research questions (Bryman, 2016). The study was guided by a pragmatic philosophy as the researchers aimed to link the study findings to practical and policy outcomes (e.g., CCE program) for the benefit of the individuals or groups (e.g., coaches and coach developers) it investigated (Gibson, 2016; Greene et al., 1989). A pragmatic position acknowledged the epistemological and ontological differences among qualitative and quantitative paradigms while viewing that the feasibility and desirability of the integration of both quantitative and qualitative methods was secondary to the practical needs of findings solutions to the research questions (Gibson, 2016). Hence, consistent with the use of mixed methods, both quantitative and qualitative methods were underpinned by the researchers’ pragmatic philosophical orientation, which was based on the notion that knowledge was constructed and made meaningful in relation to the coaches’ actions and interactions (Dewey, 1922). In line with this assumption, the researchers sought to acquire meaning in both quantitative (i.e., objective transferable findings) and qualitative (i.e., subjective experiences) responses of the NROC Level 1 coaches who were engaged in coaching and the CCE program (Creswell, 2014).

The first author, who interviewed the participants, considered himself to be an “insider” (Corbin Dwyer & Buckle, 2009) when conducting the research as he had at least 15 years of local coaching experience and was an NROC Level 1 accredited coach who was familiar with the CCE program requirements. According to Corbin Dwyer and Buckle (2009), an “insider” status “allows researchers more rapid and more complete acceptance by their participants” (p. 58) as participants tend to provide greater depth in responses as there is a perceived common understanding and shared experience between the interviewer and interviewee(s) (Sparkes & Smith, 2013). Although the first author’s background provided legitimacy and rapport, he was mindful not to project his personal beliefs or experiences about CPD throughout the interview or assume that he understood their meaning and, instead, probed further for clarity and examples.
The study was conducted using an explanatory sequential quantitative–qualitative design (Gibson, 2016; Greene et al., 1989; Ivanka, 2014). Specifically, the study consisted of an initial quantitative component (i.e., questionnaire) and a subsequent qualitative component (i.e., interview) wherein meta-inferences were developed based on initial quantitative analysis of the research questions and subsequent more in-depth exploration of the qualitative results using qualitative methods (Ivanova, 2014).

**Recruitment and Participants**

Prior to participant recruitment, approval was granted by the university’s research ethics committee and Sport Singapore. Participants invited for the study were certified Level 1 coaches registered under the NROC. Following completion of an online questionnaire, participants were purposefully selected for a semi-structured interview based on the criteria of having at least 10 years of coaching experience and having been registered under the NROC for at least 5 years. The inclusion criteria for the interview ensured that participants had a sound understanding of coaching as well as their own learning and have experienced several CCE programs over the years (Sparks & Smith, 2013).

The online questionnaire was completed by 124 coaches—43 full-time (34.7%), 69 part-time (54.6%), and 12 volunteer (9.7%) coaches from 28 sports. This included 98 male (79.0%) and 26 female (21.0 %) coaches, who ranged in age from 22 to 74 years ($M = 44.59$, $SD = 12.3$) and had 1–35 years ($M = 13.85$, $SD = 10.0$) of coaching experience. These coaches self-reported their experience in various coaching contexts—participation only (78 coaches; 62.9%), performance only (5; 4.0%), participation and performance (39; 31.5%)—although two coaches (1.6%) did not indicate their experience in coaching context.

Seven coaches (six men and one woman) were interviewed, which comprised four part-time and three full-time coaches from five sports. The coaches ranged in age from 42 to 56 years ($M = 49$, $SD = 4.8$) and had 20–30 years ($M = 23.86$, $SD = 4.6$) of coaching experience. Numbers (e.g., C1) were assigned to each participant to maintain confidentiality of their identity and to differentiate the coaches.

**Instruments and Procedure**

The instruments used to collect data were a closed-item online questionnaire to gather quantitative data and a WhatsApp phone interview to gather qualitative responses. The WhatsApp application was chosen by the researchers and agreed to by the coaches as it facilitated convenient scheduling of the interview, reaching participants with busy schedules, and assisting participants to feel more comfortable in disclosing sensitive information compared with a face-to-face interview (Sparks & Smith, 2013).

In developing the instruments (questionnaire and interview guide), we searched the literature to compile a list of sources that would be relevant to answer the research questions. To achieve this, we followed a four-step process. First, we utilized previous questionnaires examining coaches’ preferences in CPD learning (Kubayi et al., 2016; Vargas-Tonsing, 2007). Next, to ensure that the questions in the instruments were contextualized for Singapore NROC coaches, additional questions on CPD learning were included based on the CCE program and its requirements (Sport Singapore, 2021). Third, to understand the study participants’ views on coaching effectiveness, we reviewed the recent sport coaching literature and designed both questionnaire items and interview questions based on Côté and Gilbert’s (2009) definition of coaching effectiveness. Finally, content and face validity of the questionnaire was addressed through consultation with four coaching specialists (e.g., staff from CoachSG, experts in coach education, practicing coaches). Feedback resulted in minor modifications, such as word changes to remove ambiguity and reordering some questions for flow.

**Questionnaire Design**

The online questionnaire was designed to be completed within 15–30 min. To accommodate coaches who were more proficient in Mandarin, a professional translator was engaged to provide a Mandarin-translated version of the questionnaire. The questionnaire was structured in six sections. The first section asked questions relating to the coach’s beliefs on coaching effectiveness (Côté & Gilbert, 2009). Questions were structured on a 5-point Likert scale on level of importance in the application of coaching knowledge and development of athlete outcomes. The second section asked questions related to the coach’s participation in CCE activities. For each CCE activity, the coaches rated how the CCE activity improved their coaching effectiveness (scale of 1–4). The third section explored coaches’ attitudes toward sources of learning in improving their coaching effectiveness (scale of 1–4). The scale of 1–4 was selected to avoid participants indicating a “neutral” response. The fourth section asked questions relating to the coaches’ preferences of topics for future CCE activities and asked that they rank their top three choices. The fifth section consisted of questions relating to reaccreditation requirements. Coaches rated their level of agreement (scale of 1–5) to each of the CCE requirements. The final section comprised questions relating to the coach’s biography and the coach’s learning motivations and challenges to CPD. Questions on learning motivations and challenges to CPD required coaches to rank their main three reasons.

**Interview Design**

To facilitate recollection of thoughts, an interview guide was sent to participants at least 2 days prior to the interview. The semistructured interview was organized in three sections (see Supplementary Material [available online]). Introductory questions were first asked to build rapport and understand the coaching background of the participant. The second section aimed to understand the participant’s views on effective coaching. The last section asked the participant’s views of specific aspects of the CCE program (i.e., learning experiences, needs, preferences, motivations, and challenges). Questions were open ended with probes in Sections 2 and 3 becoming more targeted to further explore and understand the coach’s perceptions from the questionnaire. On average, the duration of each interview was 52 min.

**Data Analyses**

**Quantitative Data**

Descriptive statistics were calculated (percentage, mean, and $SD$) for all responses. To examine differences in responses, a paired-samples $t$ test ($p < .05$) was performed for scores between subcomponents on coaching effectiveness and CCE activity (coaching practice and coach education) learning and within each of the reaccreditation requirements. Furthermore, a one-way analysis of variance ($p < .05$) was used to examine differences of perceptions on reaccreditation requirements between coaching status (full-time, part-time, and volunteer). To measure effect sizes, the Cohen’s $d$ (for $t$ test) and...
partial eta-squared (for analysis of variance) were determined. To examine associations between coaching status and coaching context (participation, performance), a chi-square ($p < .05$) analysis was used on perceptions on their learning needs (i.e., CCE topics). Finally, to analyze responses on preferred source of learning, a principal components analysis with varimax rotation (eigenvalues > 1.0) was employed on the 17 attitudinal questions. Sources of learning with a loading of > 0.30 were rejected from each component.

**Qualitative Data**

Directed content analysis was chosen as we wanted to take a deductive approach to coding and use the specific questionnaire categories that were based on previous literature on CPD participation and learning as well as existing theory of effective coaching to gain a better understanding of this in a new context (Singapore NROC Level 1). Thus, interview transcripts were deductively analyzed using a directed content analysis approach (Hsieh & Shannon, 2005) to provide supplementary and in-depth evidence to questionnaire responses (Bryman, 2016; Gibson, 2016). The transcripts were initially read for familiarization, with initial coding involving any text that was related to effective coaching, CCE learning activities, and CCE participation being highlighted. This was followed by further deductive analysis of the highlighted text into the predetermined categories of coaching knowledge, developing athlete outcomes, CCE learning activities, CCE learning preferences, CCE requirements, CCE participation motivation, and CCE participation challenges. This directed content analysis allowed meaningful patterns in the data to be identified within each category with supportive or critical examples provided (Hsieh & Shannon, 2005) to supplement and extend the quantitative findings.

**Trustworthiness**

To ensure that the data were analyzed and interpreted accurately according to participants’ perspectives, measures to ensure trustworthiness were undertaken (Kyngäs et al., 2020; Lincoln & Guba, 1985). To increase the credibility of the study, interviews and coding were done by the first author, who was an accredited coach in Singapore with at least 15 years of experience. To reduce the potential for the author’s background and assumptions of reality to be a source of bias, the second author, who was experienced in qualitative research and coach education, acted as a critical friend throughout the data process, challenging assumptions and encouraging critical reflection. The interviews were transcribed verbatim and sent to each participant for approval to ensure that the data were accurately captured. Following participant approval and response, the transcripts did not require revisions. Authenticity was addressed by purposive sampling that ensured that participants had an understanding of the context being examined, and the use of open and probing questions enabled coaches to convey their views. A consistent research process using a research audit trail and having clearly defined definitions of the predetermined categories used in the content analysis enhanced confirmability and dependability. A range of direct quotes enhanced transferability of findings as the reader could interpret and apply the findings to their own context.

**Results and Discussion**

The purpose of this study was to examine the coaches’ perceptions of effective coaching, their learning experiences from the current CCE activities, their CCE learning needs and preferences, and motivations and challenges to participation in CCE activities. Findings from the study offer unique insights that may provide suggestions to the design of the CCE program to positively influence coach learning and CCE participation for NROC Level 1 coaches.

**Coaching Knowledge**

Coaches agreed that all forms of knowledge were required if they were to be effective in holistically developing their athletes ($M = 4.48$, $SD = 0.37$; Table 1). They viewed “knowledge of sport” ($M = 4.77$, $SD = 0.43$), $t(123) = 7.354$, $p < .001$, $d = 0.64$, and “communication with athletes” ($M = 4.73$, $SD = 0.45$), $t(123) = -6.745$, $p < .001$, as most important to their role as effective coaches, whereas “sport science knowledge” was perceived as the least important ($M = 4.06$, $SD = 0.73$), $t(123) = 7.976$, $p < .001$, $d = 0.79$. These findings partly support previous literature that reported that sport-specific knowledge and communication with athletes is considered “required knowledge” (Abraham et al., 2006, p. 559) for coaches to be effective and facilitate youth athlete development (Côté et al., 2016; Holt et al., 2017). However, considering that sport science knowledge is considered essential to coaching effectiveness (Côté & Gilbert, 2009), the coaches in this study did not seem to place much value on it. Taken together, this view of effective coaching by the coaches of the present study suggests that the coaching knowledge requirements of the NROC Level 1 coaches may be different from coaches that practice in performance contexts (Abraham et al., 2006; Araya et al., 2015). The current coaches prioritized the importance of “sport-specific knowledge” and the knowledge to effectively communicate with athletes and other stakeholders (e.g., parents), which aligns with the need for Singapore coaches who practice in schools to focus on sessions that also achieve participation outcomes, such as values (e.g., resilience) and other desirable attributes (e.g., life skills), in their athletes (Koh et al., 2017).

<table>
<thead>
<tr>
<th>Beliefs on Coaching Effectiveness (Coaching Knowledge)</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of coaching knowledge</td>
<td>124</td>
<td>4.77</td>
<td>0.43</td>
</tr>
<tr>
<td>Knowledge of sport</td>
<td>124</td>
<td>4.48</td>
<td>0.55</td>
</tr>
<tr>
<td>Coaching strategies</td>
<td>124</td>
<td>4.06</td>
<td>0.73</td>
</tr>
<tr>
<td>Sport science knowledge</td>
<td>124</td>
<td>4.44</td>
<td>0.42</td>
</tr>
<tr>
<td>Professional (overall)</td>
<td>124</td>
<td>4.73</td>
<td>0.45</td>
</tr>
<tr>
<td>Communication with athletes</td>
<td>124</td>
<td>4.22</td>
<td>0.75</td>
</tr>
<tr>
<td>Communication with parents</td>
<td>124</td>
<td>4.40</td>
<td>0.69</td>
</tr>
<tr>
<td>Interpersonal (overall)</td>
<td>124</td>
<td>4.44</td>
<td>0.49</td>
</tr>
<tr>
<td>Personal beliefs about coaching</td>
<td>124</td>
<td>4.52</td>
<td>0.58</td>
</tr>
<tr>
<td>Lifelong learning</td>
<td>124</td>
<td>4.52</td>
<td>0.59</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>124</td>
<td>4.53</td>
<td>0.58</td>
</tr>
<tr>
<td>Ability to do self-reflection</td>
<td>124</td>
<td>4.60</td>
<td>0.54</td>
</tr>
<tr>
<td>Intrapersonal (overall)</td>
<td>124</td>
<td>4.54</td>
<td>0.47</td>
</tr>
</tbody>
</table>

*Significant difference with application of coaching knowledge (overall; $p < .05$). **Significant difference between professional (overall) and intrapersonal (overall; $p < .05$). ***Significant difference between interpersonal (overall) and intrapersonal (overall; $p < .05$).
Coaches rated the broader area of intrapersonal knowledge \( (M = 4.54, SD = 0.47) \) as significantly more important than professional \( (M = 4.44, SD = 0.42) \), \( \tau (123) = 2.377, p = .019, d = 0.24 \), and interpersonal knowledge \( (M = 4.45, SD = 0.49) \), \( \tau (123) = 2.291, p = .024, d = 0.20 \). Within intrapersonal knowledge, the ability to self-reflect \( (M = 4.60, SD = 0.54) \), \( \tau (123) = 3.052, p = .003, d = 0.20 \), was most important to the coaches. All participants interviewed reaffirmed the view that intrapersonal knowledge is essential to coaching effectiveness. As illustrated by C6, “A coach should always look into educating himself or herself. That is a given.” On a similar note, C3 stated that a coach should “encourage their players to reflect by setting an example” and that reflection helps coaches “become better.”

Studies have widely indicated that intrapersonal knowledge plays a crucial role in the development of coaching effectiveness (Cushion et al., 2010). Many scholars have also advocated that CPD programs should place greater emphasis on honing the critical thinking skills of coach learners (Armour, 2010; Koh, Bloom, et al., 2014). Indeed, although formal and nonformal sources of learning have their merits, studies also suggest that coaches view informal sources as a more essential part of their development (Mallett et al., 2009; Nelson et al., 2006). In the context of the CCE program for Singapore NROC coaches, wherein self-guided learning is mandated, coaches may experience difficulty in discerning the credibility of informal learning sources (Koh et al., 2018). Considering these factors, it may be appropriate to include CCE activities that develop the critical thinking abilities of these coaches so that they can effectively self-regulate their learning (Driska & Nalepa, 2019).

### Developing Athlete Outcomes

The development of all four athlete outcomes (competence, connection, character, and confidence; Côté & Gilbert, 2009) was reported by coaches as important \( (M > 4.48, SD = 0.43; \) Table 2) with character \( (M = 4.54, SD = 0.55) \) rated as significantly more important than confidence \( (M = 4.43, SD = 0.50) \), \( \tau (123) = 2.897, p = .004, d = 0.22 \). Within character development, the value of sportsmanship \( (M = 4.63, SD = 0.58) \), \( \tau (123) = 4.151, p < .001, d = 0.29 \), was viewed as most important. Corroborating the quantitative findings, coaches interviewed shared that although athlete development should be holistic, priority should be placed on developing character in their athletes: “For me, clearly the most important emphasis is on character. Hence, I do believe that all four are important, but character is the anchor” (C3).

In addition to the notion that character development should be prioritized, coaches elaborated that they should be skillful in achieving multiple integrated athlete outcomes while coaching their athletes. As exemplified by C2,

If I have connection with the kids, it would be easier for a coach to mentor them in their character. If they are comfortable and trust the coach, it’s easier to improve their competency. And if they are competent in what they are doing, naturally confidence will develop. So, I guess there is an interconnection about everything.

This perception of effective coaching is perhaps influenced by their coaching experiences (94.4% have experienced participating coaching). In Singapore, the high demand for school coaching (Koh, Foo, et al., 2014) and the mandate from the education sector for a holistic values-based education for their students (Koh et al., 2017) reinforce their role (Gilbert & Trudel, 2004) as a participant and educational coach who does not only focus on improving the competence of their athletes (Côté et al., 2016; Holt et al., 2017). In view of coach development, the findings provide some suggestions on possible CPD learning content (e.g., achieving all four athlete outcomes with an emphasis on character development) for these coaches so that they can operate more effectively in their roles.

### Perceptions of CCE Activity Learning and CCE Requirements

As mentioned previously, Level 1 coaches must complete at least 15 hr of “Coaching Practice” and 15 hr of “Coach Education” within a 3-year period. When asked to rate the value of their CCE coaching practice activities (scale of 1–4), coaches perceived that “assisting a more experienced coach” \( (M = 3.30, SD = 0.64) \) was the most beneficial coaching activity in improving their coaching, followed by “mentoring other coaches” \( (M = 3.00, SD = 0.65) \) and “conducting their own training sessions” \( (M = 2.99, SD = 0.70) \). When comparing coaching practice activities, only “assisting a more experienced coach,” \( \tau (32) = 2.700, p = .011, d = 0.26 \), and “mentoring other coaches,” \( \tau (19) = 2.266, p = .035, d = 0.263, d = 0.312 \), were significantly different. The range of CCE coach education activities was perceived by coaches as somewhat helpful (e.g., “contributing articles to journals, newsletters or other relevant publications” \( ; M = 2.50, SD = 0.71) \) to helpful (e.g., “Other Coaching Education activities”; \( M = 3.40, SD = 0.71) \). Comparison of coach education activities revealed that “Other Coaching Education activities,” \( \tau (24) = 3.180, \)

### Table 2: Beliefs on Coaching Effectiveness (Development of Athlete Outcomes)

<table>
<thead>
<tr>
<th>Development of Athlete Outcomes</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport technical skills</td>
<td>124</td>
<td>4.58</td>
<td>0.51</td>
</tr>
<tr>
<td>Sport tactical skills</td>
<td>124</td>
<td>4.35</td>
<td>0.59</td>
</tr>
<tr>
<td>Physical fitness</td>
<td>124</td>
<td>4.43</td>
<td>0.63</td>
</tr>
<tr>
<td>Competence (overall)</td>
<td>124</td>
<td>4.45</td>
<td>0.47</td>
</tr>
<tr>
<td>Ability to meet challenges</td>
<td>124</td>
<td>4.46</td>
<td>0.58</td>
</tr>
<tr>
<td>Performing under pressure</td>
<td>124</td>
<td>4.31</td>
<td>0.73</td>
</tr>
<tr>
<td>Confidence to do well</td>
<td>124</td>
<td>4.43</td>
<td>0.63</td>
</tr>
<tr>
<td>Ability to recover from difficulties</td>
<td>124</td>
<td>4.48</td>
<td>0.58</td>
</tr>
<tr>
<td>Ability to make major decisions</td>
<td>124</td>
<td>4.38</td>
<td>0.71</td>
</tr>
<tr>
<td>Overall sense of positive self-worth</td>
<td>124</td>
<td>4.52</td>
<td>0.56</td>
</tr>
<tr>
<td>Confidence (overall)</td>
<td>124</td>
<td>4.43</td>
<td>0.50</td>
</tr>
<tr>
<td>Working well with coaches</td>
<td>124</td>
<td>4.52</td>
<td>0.61</td>
</tr>
<tr>
<td>Working well with teammates</td>
<td>124</td>
<td>4.50</td>
<td>0.61</td>
</tr>
<tr>
<td>Connection (overall)</td>
<td>124</td>
<td>4.51</td>
<td>0.56</td>
</tr>
<tr>
<td>Displaying good sportsmanship</td>
<td>124</td>
<td>4.66</td>
<td>0.54</td>
</tr>
<tr>
<td>Avoiding bad sportsmanship</td>
<td>124</td>
<td>4.63</td>
<td>0.62</td>
</tr>
<tr>
<td>Engaging in positive behavior in society</td>
<td>124</td>
<td>4.34</td>
<td>0.72</td>
</tr>
<tr>
<td>Avoiding negative behavior in society</td>
<td>124</td>
<td>4.56</td>
<td>0.65</td>
</tr>
<tr>
<td>Character (overall)</td>
<td>124</td>
<td>4.54</td>
<td>0.55</td>
</tr>
<tr>
<td>Development of athlete outcomes (overall)</td>
<td>124</td>
<td>4.48</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Note. *Significant difference with development of athlete outcomes (overall; \( p < .01 \)). **Significant difference between confidence (overall) and character (overall; \( p < .01 \)).
experiences, the present study 
nonexperiential sources (Mallett et al., 2009).

and a guide 
(i.e., through a mentor 
coaches valued learning environments that are both autonomous 
and a guide 
(coaching practice) and nonexperiential (coach education) sources.

With reference to their view of CCE coaching practice activities, the coaches interviewed also expressed their desire to learn from a more experienced coach. This may be an indication that the NROC Level 1 coaches are aware that their quality of learning is limited without guidance (Ryan & Deci, 2000). C3 illustrated the benefits of observing a coaching session conducted by a senior coach: “I got [a senior coach] to do a coaching session for some netball shooters . . . . So, when I watched her coach, I also learnt.”

This finding reverberates with literature indicating that coaches learn by developing their coaching strategies through combining their observations of more experienced coaches and their own trial and error experiences (Abraham et al., 2006; Jones et al., 2003). Indeed, studies demonstrate that novice coaches learn by mimicking perceived good practices, whereas expert coaches learn by adapting their coaching (Nash & Sproule, 2012).

In support for autonomy-supportive (Ryan & Deci, 2000) learning environments (e.g., “mentoring other coaches”; $M = 3.00$, $SD = 0.65$), the interviewed coaches commonly expressed the influence of a mentor in contributing to a coach’s learning (Erickson et al., 2008; Koh, Bloom, et al., 2014; Van Woezik et al., 2021). Specifically, coaches valued the feedback provided by a mentor who is able to observe the coach “in action (coaching) on a regular basis” (C3). Another coach explained that a mentor’s feedback would have a “greater bearing on [a coach’s] future coaching performance” as mentors are perceived “as leader and a guide” (C6). These examples suggest that the participant coaches valued learning environments that are both autonomous (i.e., choosing their own approach toward coaching) and supported (i.e., through a mentor’s feedback). Summarizing the CCE learning experiences, the present study findings suggest that these Level 1 coaches valued learning from a more experienced coach (e.g., assistant coaching) and from a range of experiential and nonexperiential sources (Mallett et al., 2009).

With regard to the CCE requirements, coaches agreed with the 3-year membership period ($M = 3.86$, $SD = 1.13$) for reaccreditation, although they were less in agreement ($M = 3.10$, $SD = 1.19$) with the price of the membership fee. Coaches were significantly more agreeable to the duration of coaching practice hours ($M = 3.79$, $SD = 1.00$) compared with the duration of coach education hours ($M = 3.42$, $SD = 1.11$), $t(123) = 5.223$, $p < .001$, $d = 0.35$. Perceptions of reaccreditation requirements did not differ between full-time, part-time, and volunteer coaches, $F(2, 121) = 2.029$, $p = .136$, $\eta^2_p = .03$. Supporting the quantitative findings, six of the coaches interviewed advocated for a set of requirements that would ensure consistent CPD participation. C3 said, “I think it is definitely necessary to have CCE and to implement certain CCE hours for us. In the sense to force us or to coerce (laughs) us to develop ourselves, or to upgrade, or to improve” (C3). Although lifelong learning is considered crucial for coaching effectiveness (Trudel et al., 2010), mandating a set of CPD requirements may not necessitate effective coach learning through CPD (Nash et al., 2017). In addition, Trudel et al. (2010) argued that CPD programs still play an important role in facilitating effective development of coaches’ knowledge when coaches are given greater access to unique learning opportunities and environments (e.g., CoPs). Hence, the CCE program should consider mandating a different set of reaccreditation requirements so that coaches are encouraged to participate in CCE activities that effectively contribute to their development.

Coaches surveyed were mildly in favor of the new CCE requirements—inclusion of self-guided hours ($M = 3.35$, $SD = 1.13$). Specifically, flexibility and convenience were common reasons cited by the interviewed coaches (six out of seven). One coach explained, “It’s really a lot easier [to meet the requirements] because you can have your own hours of self-learning. To me, I think it’s a bonus” (C4). Another participant stated, “I think Self-Guided hours, would be very helpful to a lot of coaches . . . . it allows the coaches to minimise their hours from attending a course. During their free time, they could drop by the library” (C1). Although studies have indicated the importance for coaches to self-regulate their learning (Driska & Nalepa, 2019), Koh et al. (2018) cautions that quality learning is compromised when coaches choose to learn from less credible sources. These findings highlight that implementing self-guided hours, though it has its merits, does not guarantee the quality of learning.

**Preferred Topics**

Questionnaire responses revealed that the key specific topics of interest for future CCE events were “sport psychology” (50.5%), “use of technology in coaching,” (47.6%) and “career planning and development” (45.2%). Further analysis revealed that a coach’s status, $\chi^2(2, N = 124) = 0.13$, $p = .99$, or their coaching context, $\chi^2(2, N = 124) = 1.41$, $p = .49$, was not associated with their preferred topics for CCE activities. As one interviewed coach stated, “All coaches should learn psychology . . . . I think everybody (coaches) will be interested in this course . . . . coaches must know how to understand an athlete’s psychology . . . . . .” (C7).

The desire to learn more about sport psychology is consistent with previous coaching literature (Kubayi et al., 2016; Vargas-Tonsing, 2007). Although the specific interests within sports psychology were not explicitly provided, “motivational techniques” have previously been reported as a key learning area (Kubayi et al., 2016; Vargas-Tonsing, 2007). As the coaches in this study valued the holistic development of athletes (i.e., developing character in their athletes), they may desire to learn how to effectively develop psychosocial competencies in their athletes (Côté et al., 2016). By leveraging coaches’ motivation to better understand how they can contribute to their athletes’ psychological (Côté et al., 2016) and holistic development (Côté et al., 2016; Holt et al., 2017), CCE activities should strive to improve the knowledge and confidence of coaches in this aspect.

Although it is important to develop coaches’ competencies in youth development, it is also essential to develop their technological knowledge and proficiencies. In view of the rapid advancements in technology, coaches spoke of the importance of keeping their practice relevant. C4 shared the benefits of utilizing technology in his coaching: “Personally have been using technology like Zoom with my athletes . . . . without being physically there I could actually [coach] that particular individual.” Keeping in pace with technology is important not just for coaches to keep their practice relevant but also to prepare themselves for unprecedented times (Calderón et al., 2021). Moreover, literature indicates that coaches’ proficiency with technology will facilitate their development of knowledge when they undertake professional development opportunities remotely (Driska & Nalepa, 2019; Koh et al., 2018). These studies highlight key benefits of learning with technology, such as

$\chi^2 = 12.93$, $d_{eff} = 0.28$, were significantly different. When the combined ratings for all activities within the coaching practice ($M = 2.97$, $SD = 0.65$) and coach education ($M = 2.91$, $SD = 0.71$) categories were calculated, the coaches perceived that both categories were equally beneficial to their learning, $t(91) = 0.960$, $p = .340$, $d = 0.10$. The quantitative findings indicate differences in how coaches perceive learning from experiential (coaching practice) and nonexperiential (coach education) sources.
complementing face-to-face learning (Araya et al., 2015), promoting convenience and cost efficiency in participation (Koh et al., 2018), establishing meaningful networks with coaches and mentors (Van Woezik et al., 2021), and improved learning experiences (Driska & Nalepa, 2019).

In the aspect of career development, the coaches interviewed commonly raised the desire for improved remuneration. Explaining the general view that Singapore coaches are not well remunerated, C6 opined, “Unless you are a semi-professional coach in Singapore, most coaches will tell you, ‘Coaching is not lucrative,’ ‘I get by’ and, ‘I can’t dream of anything extravagant.’” Of a similar view, C1 said, “Maybe coach development should not just look into improving coaches’ skills but maybe look into improving coaches’ medical and insurance coverage?” Indeed, when asked about recommendations to encourage coaches to intrinsically develop themselves in CCE participation, C6 shared that coach development bodies should “address the concerns of the livelihood of coaches first.” In summary, both quantitative and qualitative responses suggest that coaches’ desire for improved remuneration has prompted them to seek more information on the topic of “career planning and development.” Examining the literature, the topic of career development of coaches is a common concern for freelance coaches (54.6% of present coaches surveyed are coaching part time), who are largely left on their own to evaluate their own competencies (Taylor & Sheridan, 2020). For coaches who are considering moving toward performance coaching or coaching as a profession (Erickson et al., 2008), coaches being equipped with the knowledge of possible career pathways is essential to their development (Taylor & Sheridan, 2020). Indeed, the view that the career of sport coaches is multifaceted and nonlinear suggests that the NROC Level 1 coaches desire greater certainty through being better informed of coaching career options that may contribute to improved remuneration.

**Preferred Delivery**

The coaches surveyed indicated their preferred sources of learning (4-point Likert scale) as “self-reflection” ($M = 3.40, SD = 0.60$), “coaching experience” ($M = 3.40, SD = 0.60$), “understudying, assisting or observing other coaches” ($M = 3.30, SD = 0.64$), and “self-directed learning” ($M = 3.22, SD = 0.68$; Table 3). To examine coaches’ attitudes to the various sources of learning, a principal components analysis classified the 17 sources of learning to four components. Based on magnitude of loading factors within each component, the components were classified as: collaborative, experientially driven, recognized mediated, and internal unmediated. These four classifications of source of learning suggest that the coaches in this study desire a holistic coach learning experience that is aligned with principles of adult learning strategies (Knowles et al., 2012). For instance, the first component identified (collaborative learning) aligns with the assumption that prior experience plays an important role in coach learning (Nelson et al., 2013). The view that all learning sources should be valued corroborates that of many scholars, who advocate for the provision of a range of learning experiences (Mallett et al., 2009; Trudel et al., 2013) and a blend of learning situations (Araya et al., 2015). Moreover, allowing exposure to multiple learning sources would better accommodate the coaches’ diverse learning styles and biographies (Stodter & Cushion, 2019).

Coaches’ preference for self-directed and experiential sources of learning corroborates previous literature on the merits of informal sources of learning (Culver et al., 2019; Koh et al., 2018) and that coaching experience plays a pivotal role in the development of coaching knowledge (Stodter & Cushion, 2017). Moreover, as discussed earlier, this substantiates the view that intrapersonal knowledge is important (e.g., “ability to reflect”; $M = 4.60, SD = 0.54$), self-guided hours are favored ($M = 3.35, SD = 1.13$), and CCE coaching practice activities are highly valued (e.g., “assisting a more experienced coach”; $M = 3.30, SD = 0.64$). Considering that coaching is complex (Cushion et al., 2010), which requires coaches to construct their own knowledge (Jones et al., 2003), opportunities for coaches to self-direct and, subsequently, reflect (Schön, 1987) are critical for coaches’ development of knowledge (Gilbert & Trudel, 2001; Trudel et al., 2013).

### Table 3 Learning Preferences and Classification Based on Source of Learning

<table>
<thead>
<tr>
<th>Source of learning</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Classification of learning source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-reflection</td>
<td>124</td>
<td>3.40</td>
<td>0.60</td>
<td>Internal unmediated</td>
</tr>
<tr>
<td>Coaching experience</td>
<td>124</td>
<td>3.40</td>
<td>0.60</td>
<td>Experientially driven</td>
</tr>
<tr>
<td>Understudying, assisting, or observing other coaches</td>
<td>124</td>
<td>3.30</td>
<td>0.64</td>
<td>Experientially driven</td>
</tr>
<tr>
<td>Self-directed learning</td>
<td>124</td>
<td>3.22</td>
<td>0.68</td>
<td>Internal unmediated</td>
</tr>
<tr>
<td>Sharing of best practices</td>
<td>124</td>
<td>3.15</td>
<td>0.68</td>
<td>Collaborative</td>
</tr>
<tr>
<td>Playing experience</td>
<td>124</td>
<td>3.10</td>
<td>0.70</td>
<td>Experientially driven</td>
</tr>
<tr>
<td>Participation in group discussion with expert coaches</td>
<td>124</td>
<td>3.09</td>
<td>0.73</td>
<td>Collaborative</td>
</tr>
<tr>
<td>Guiding newer/less experienced coaches</td>
<td>124</td>
<td>3.08</td>
<td>0.78</td>
<td>Collaborative</td>
</tr>
<tr>
<td>Interaction with high-level athletes</td>
<td>124</td>
<td>3.08</td>
<td>0.74</td>
<td>Experientially driven</td>
</tr>
<tr>
<td>Certification courses</td>
<td>124</td>
<td>3.03</td>
<td>0.72</td>
<td>Recognized mediated</td>
</tr>
<tr>
<td>Workshops/seminars/conferences</td>
<td>124</td>
<td>2.99</td>
<td>0.68</td>
<td>Recognized mediated</td>
</tr>
<tr>
<td>Problem-based learning</td>
<td>124</td>
<td>2.96</td>
<td>0.75</td>
<td>Internal unmediated</td>
</tr>
<tr>
<td>Communities of practice/coach learning groups</td>
<td>124</td>
<td>2.91</td>
<td>0.71</td>
<td>Collaborative</td>
</tr>
<tr>
<td>Formal education (full time/part time)</td>
<td>124</td>
<td>2.88</td>
<td>0.78</td>
<td>Recognized mediated</td>
</tr>
<tr>
<td>Networking/coach engagement sessions</td>
<td>124</td>
<td>2.81</td>
<td>0.71</td>
<td>Collaborative</td>
</tr>
<tr>
<td>Online learning</td>
<td>124</td>
<td>2.79</td>
<td>0.76</td>
<td>Internal unmediated</td>
</tr>
<tr>
<td>Conducting coaching research</td>
<td>124</td>
<td>2.77</td>
<td>0.80</td>
<td>Internal unmediated</td>
</tr>
</tbody>
</table>
The interviewed coaches spoke of the value of coaching experience as it provided a more authentic and contextualized learning environment (Griffiths et al., 2018). Referring to the CCE requirement of accumulating a minimum of 15 coaching practice hours for an NROC Level 1 coach, C3 expressed, “Personally feel that Coaching [Practice] hours is too few … how much time that person spends on coaching, that’s actually quite important.” Further highlighting the value of coaching experience, one basketball coach shared, “Theory and practical is totally different … some coaches have good theories, but in competition, they may not be able to perform. Because they don’t have the experience [coaching a team]” (C7). However, Gilbert and Trudel (2001) pointed out that coaching experience is only an effective source of learning when coaches are deliberate in reflecting on their experiences. Indeed, learning sciences have contended that self-reflection is necessary for deep learning (Moon, 2004) through experiential sources (Kolb, 2014).

Besides advocating for experientially driven learning environments (e.g., coaching experience), the interviewed coaches also valued collaborative platforms (e.g., “sharing of best practices”; M = 3.15, SD = 0.68). The participants highlighted the benefits of acquiring knowledge through sharing of experiences with their fellow coaches during networking sessions (Erickson et al., 2008; Stoszkowski & Collins, 2014; Van Woezik et al., 2021). One coach mentioned that, through sharing, “there are some qualities that [a coach] can pick up from other coaches’ examples” (C2). Another coach illustrated, “Being able to speak to other coaches, there are snippets of information that you can get off them. These are valuable bits of information which you can piece the whole jigsaw to a complete picture” (C6). Corroborating the literature, informal sources, such as learning communities (Culver et al., 2019), are valued by coach learners as they would account for the complex (Cushion et al., 2010) and context-specific (Griffiths et al., 2018) nature of coaching. Furthermore, considering the individualized learning needs of coach learners (Nash & Sproule, 2012) and that coaches are social beings who value knowledge sharing through interaction with other coaches (Van Woezik et al., 2021), the findings from the present study echo the view that CCE activities should provide ample opportunities for collaborative learning.

As alluded to earlier, coach learning is enhanced by a significant other (e.g., mentor), and coaches expressed the importance of quality facilitation during CCE workshops. The coaches interviewed highlighted the influence of an experienced and effective facilitator to engage the coaches in active learning rather than having presenters talk the whole time. C3 illustrated,

The two presenters in the first part of the session, said that “they wanted a lot of interaction from us.” But eventually 80 to 90 percent of the time, it’s them talking to us. I was waiting for the interaction, but it didn’t happen. Hence, I felt that it (the course) wasn’t very effective.

An effective facilitator or coach developer can positively contribute to the learning experiences of their coaches (Nelson et al., 2013; Paquette & Trudel, 2018; Stodter & Cushion, 2019; Trudel et al., 2013) by utilizing a range of strategies to engage their participants in active learning (Armour, 2010). Ideally, facilitators can encourage their participants to critically examine the learning content (Abraham et al., 2006; Cushion et al., 2010) while devising appropriate strategies to contextualize participants’ learning (Armour, 2010; Trudel et al., 2010). Moreover, considering that coaches have highly individualized learning needs (Culver et al., 2019; Driska & Nalepa, 2019), learner-centered approaches (Ciampolini et al., 2019; Paquette & Trudel, 2018) should promote effective CPD learning. Indeed, a competent coach developer can utilize a blend of innovative pedagogies in various situations to enhance learning, such as engaging learners in deep discussion of experiences, video review, and providing online feedback of coaching performance (Araya et al., 2015). Considering these factors, it is perhaps worth investing resources to support the training and development of coach developers (Stodter & Cushion, 2019).

Motivations and Challenges for CCE Participation

The learning motivations of coaches in this study illustrate their extrinsic attitudes toward CCE participation. Specifically, the coaches surveyed are primarily motivated to participate in CCE activities so they meet reaccreditation requirements (78.2%). As explained by one coach, “Most of the coaches participate because of requirements. Once they meet the requirements, they stop participating” (C7). Adopting a similar view, another coach illustrated,

So many times, we do the CCE Programme, it’s not because we want to do it. But because it’s a requirement. Unless that conference or seminar that you are attending, has a direct impact on your sport. Otherwise very often, people will look at it, “I’m here just to log in my hours”. . . . It’s become more like a chore. (C6)

This finding supports evidence from similar studies with youth volunteer (Vargas-Tonsing, 2007) and South African (Kubayi et al., 2016) coaches wherein the participants expressed “league requirements” as the most important reason for attending CPD. Other studies similarly reveal coaches’ motivations toward attending CPD as a “tickling a box” activity (Griffiths et al., 2018; Nash et al., 2017; Nelson et al., 2013). Such extrinsic attitudes toward reaccreditation requirements may be explained as most coaches in this study are part-time or volunteer coaches (65.3%). This finding, in retrospect, contradicts the view that intrapersonal knowledge is important. This contradictory view may be explained if the coaches are not optimally engaged in some of their learning experiences and not being offered suitable opportunities to choose their desired learning topics. Indeed, scholars highlight that for coaches’ learning engagement to improve, the specific learning needs of coaches operating within their context must be addressed (Nash et al., 2017).

Coaches surveyed indicated that “relevance of topics” (60.5%) was the second highest motivating factor to CCE participation. In agreement with the questionnaire results, coaches interviewed identified several other content-related factors (e.g., interesting topics and range of topics) that would encourage engaged learning. Based on their past experiences in CCE activities, the interviewed coaches commonly recommended for CPD bodies to provide more “relevant,” “specific,” and “pin-point” topics. C6 explained that “each [coach] has different needs . . . whether it’s at high-performance, whether it’s high participation, or whether it’s just recreation level” and indicated that the current CCE content is too generic and does not address specific coaching contexts. In addition, C3 recommended a series of related content: “Bite-sized, shorter courses will be good. So instead of a ‘3-day’s strength training course,’ I would do (design) it differently . . . . Few hours, few hours, few hours . . . . And give the coach the decision to slowly scale.” Moreover, to facilitate learning content that is relevant to individual coaches, the participants advocated for practices that
allow for a choice of their topic of learning. C2 said, “The conference had a lot of breakout sessions so I chose according to what I wanted or needed.” Furthermore, C5 expressed satisfaction in her overall experience in CCE coach education activities, explaining, “Because it is the courses I chose.” This supports the view that learner-centered approaches (Paquette & Trudel, 2018) are important for coach learners.

Coaches are mainly deterred from participating in CCE activities by factors of “time required” (63.3%), cost (54.0%), and “irrelevance of topics” (39.5%). Studies that examine coaches’ challenges to CPD participation commonly highlight time and cost as key barriers (Kubayi et al., 2016; Vargas-Tonsing, 2007). Furthermore, time constraints may include conflicts with inconvenient course schedules (Cushion et al., 2010; Maclean & Lorimer, 2016), as illustrated by C1: “We cannot be sacrificing our classes and go for the courses . . . for swimming, weekends are always our busiest . . . the good (higher quality) courses that need about a whole day, normally happens on a weekend and we have no opportunity to attend.”

Five of the seven coaches interviewed spoke of expensive course fees. As C5 disclosed,

I think some of the courses we have to pay quite a lot. Especially if they get speakers from overseas . . . It’s too expensive, some of them are in thousands [of dollars], oh my God. I don’t earn that much you know? (((laughs))). (C5)

Coaches’ corresponding attitudes toward topic relevance (motivator) and irrelevance (barrier) suggest that the learning content covered in CCE activities is a key factor to their participation or nonparticipation. Past studies have indicated that the learning content did not address the needs of coaches to operate well in their context (Cushion et al., 2010; Griffiths et al., 2018), resulting in coaches’ resistance to the content taught (Nelson et al., 2013). Considering that coaches have unique needs, this increases the challenge for CPD programs to ensure that appropriate learning content is provided. Indeed, Nash et al. (2017) argued that key consequences of CPD bodies adopting intentional approaches to determine coaches’ individual needs (e.g., by conducting a needs analysis) may be time consuming and costly. In summary, it is worthwhile that CPD bodies must continue to explore unique ways to provide a CPD curriculum that addresses the general needs of coaches in a time- and cost-effective manner.

Theoretical Contributions and Practical Implications

The present study revealed the unique perspectives of NROC Level 1 coaches toward the CCE program in Singapore. Theoretically, the findings from the current study have advanced our understanding in providing effective CPD for coaches who are accredited at a novice level (NROC Level 1) and practice in a variety of contexts (participation and performance) with various years of coaching experience (Walker et al., 2018). From a pragmatic paradigm, we were able to connect, compare, and contrast the quantitative and qualitative findings, which, overall, suggest that the design and delivery of CPD programs should engage coaches in active learning, adopt coach-centered (individualized) approaches, and encourage critical reflection of coaching issues (e.g., Ciampolini et al., 2019). Moreover, the analysis revealed that CPD bodies should provide a range of learning experiences (e.g., collaborative sources) that facilitates deep learning of content. Crucially, for coach development to be transformative for coaches, CPD bodies and coach developers must have a deep appreciation of the underlying factors (e.g., social processes; Stoszowski & Collins, 2014) that would contribute toward a coaches’ (re)construction of knowledge and, subsequently, strategically and skillfully encourage our coaches to continually challenge their assumptions and the established status quo (Cushion, 2018; Stodter & Cushion, 2019).

In the context of providing effective CPD for Singapore coaches, findings indicate that the current CCE program has been supportive in further developing the coaching knowledge of NROC Level 1 coaches. In addition, the study highlights the need for CPD bodies to undertake deliberate and nuanced efforts in designing a CPD structure that optimally motivates coaches to embark on professional development. Concomitantly, the findings suggest that coach developers and coach learners also play a significant role in influencing coach development. The following section presents possible strategies that directors of CPD bodies (e.g., CoachSG), coach developers, and coaches of similar contexts may consider in contributing toward improved coach development.

CoachSG

CoachSG should consider adjusting reaccreditation requirements, so coaches have the opportunity to experience a variety of learning sources based on the four classifications of learning sources uncovered in this study. For instance, coaches may undergo 3 hr of each classification of learning (i.e., 3 hr of collaborative, experientially driven, recognized mediated, and internal unmediated sources) to allow coaches to experience the benefits that each classification of learning source provides (Mallett et al., 2009). Furthermore, to improve depth of learning (Moon, 2004), the same topic should be revisited when coaches undergo the subsequent learning experiences (e.g., content on coaching pedagogy in both collaborative and experientially driven sources). Such a strategy would allow substantial learning time (Armour, 2010) and better contextualization of learning content (Griffiths et al., 2018) when the topic is revisited in various settings while being able to meet the current learning motivations of coaches (e.g., meeting CCE requirements). Utilizing a variety of learning sources should facilitate resource maximization while providing a more comprehensive coach learning experience.

Another strategy to achieve increased learner engagement in CCE activities is to improve the quality of facilitation of coach developers (Stodter & Cushion, 2019). Coach developers should be sufficiently proficient to perform in various roles (e.g., mentor or course facilitator). As highlighted by the NROC Level 1 coaches in this study, they stressed the pivotal role that a competent facilitator and relatable mentor (Koh, Bloom, et al., 2014) plays in shaping their learning experience. Indeed, considering that coaches have diverse biographies (Stodter & Cushion, 2017), individualized learning needs (Nash & Sproule, 2012), and differing paces in which they learn, a skilled and knowledgeable coach developer should be able to engage coach learners through active learning (Armour, 2010), knowledge sharing (Culver et al., 2019), and contextualizing learning (Griffiths et al., 2018; Walters et al., 2019). To effectively achieve contextualized coach learning through quality facilitation, CoachSG could provide focused coach developer learning workshops to enhance their facilitation skills and knowledge to better engage their coaches (e.g., role-play; leading microcoach developer sessions) that would significantly add value to the earlier recommended strategy for coaches to experience a variety of learning sources. These workshops would equip coach developers to use several varieties of learner-centered
strategies (e.g., interactive activities and guided reflection) to engage their coaches and assist them in becoming autonomous learners in various settings (e.g., experientially driven sources). To provide supplementary support to coach developer learning, CoachSG may create a coach developer community of practice to encourage ongoing sharing of best practices and issues relevant to their work (Callary & Garity, 2019). Specifically, this may encourage coach developers to reflect on their epistemological beliefs (Stodter & Cushion 2019; Stoszkowski & Collins, 2014) and current approach in effectively engaging their coaches in critical discussions based on principles of andragogy (Knowles et al., 2012). Moreover, these workshops and community of practice may allow coach developers to review the design of their own CPD programs that would enhance the three areas of coaching knowledge (Côté & Gilbert, 2009) of their coaches. Ultimately, having a base of well-trained and proficient coach developers would improve the quality of CPD programs wherein coaches are better “stretched” (Walters et al., 2019, p. 161) and establish a foundation to drive other initiatives to improve CCE learning experiences for coaches.

To facilitate ample opportunities for guided experiential learning experiences for coach learners, it may be worth creating an online portal where all mentor and mentee coaches can meet and collaborate. This strategy may increase opportunities for NROC Level 1 coaches to, for instance, experience “assistant coaching” and may improve the quality of learning experiences when potential mentor–mentee partnerships are matched when their coaching philosophies align (Koh, Bloom, et al., 2014; Taylor & Sheridan, 2020; Van Woezik et al., 2021). Indeed, Taylor and Sheridan (2020) argued that the compatibility of the mentor–mentee is crucial for success and should not be viewed as simply “add two or more coaches and stir” (p. 232). To this end, CoachSG and CPD bodies around the world should view their role as a catalyst in increasing opportunities for mentors and mentees to form deep professional relationships that would encourage both parties to develop each other as professional coaches (Taylor & Sheridan, 2020; Van Woezik et al., 2021).

Coach Developers
Coach developers should consider technology-enabled approaches to increase coaches’ accessibility to informal sources of learning and in the design of existing nonformal CCE activities (Trudel et al., 2010; Van Woezik et al., 2021). On the former point, this should facilitate coaches’ preference to learn in informal and guided experiential settings; mitigate the effects of barriers such as time and cost; and promote greater flexibility, convenience, and improved CCE learning (Van Woezik et al., 2021). For example, informal opportunities may be increased when they facilitate biannual virtual communities of practice sessions wherein participants get to network with coaches operating in similar contexts. Although using technology can facilitate coaches’ completion of self-guided hours, coach developers should also consider that coach learners may require learning support as they may not be able to ascertain the credibility of online learning sources (Koh et al., 2018). To effectively address this concern, CCE activity workshops may provide training, facilitated by a knowledgeable coach developer, for coaches to develop the necessary skills to effectively self-regulate their own learning (e.g., discerning the credibility of sources).

Considering the COVID-19 pandemic, providing opportunities for coaches to participate in technology-enabled nonformal CCE activity sessions allows for continuity in learning under extenuating circumstances (Calderón et al., 2021; Van Woezik et al., 2021). As contended earlier, to prioritize quality facilitation (Walters et al., 2019), the use of virtual remote learning platforms (e.g., Zoom) should be managed by proficient coach developers so that learning resources are appropriately curated from credible sources (Koh et al., 2018), the learning experience of individual coaches is improved through increased engagement (Stodter & Cushion, 2019), and the appropriate approaches and measures are utilized to remotely assess coaches’ knowledge, skills, and attitudes (Driska & Nalepa, 2019). However, it should be acknowledged that the use of virtual platforms limits the authenticity of learning (Araya et al., 2015). Taken together, CCE activities should be prepared to provide a hybrid curriculum (combination of in-person and online learning) under normal circumstances and a full virtual curriculum under extenuating circumstances. To illustrate, CCE workshops may adopt a self-paced online approach (Driska & Nalepa, 2019) wherein part of the learning content is self-directed by the learner (Koh et al., 2018), who has the flexibility to manage their own learning schedule (Knowles et al., 2012). To complement the self-directed experience, learners submit a deliverable (e.g., online journal) to the facilitator for quality feedback and accountability. To enhance the learners’ experience, adopting active learning and learner-centered strategies (Paquette & Trudel, 2018), the coach developer should engage fellow coaches to share their learning experience while making links to how the workshop content can be applicable in their coaching context (Stodter & Cushion, 2019). Ultimately, these practical examples demonstrate that incorporating technology-enabled approaches to improve existing practices should not require heavy investment in resources (e.g., time, cost, logistics).

In planning for CCE activities, coach developers should consider apportioning more time to provide learning content that is relevant to the needs of NROC Level 1 coaches. As demonstrated in the study findings, the coaches desired to learn specific topics (e.g., use of technology in coaching) that would enhance their role (e.g., to nurture their athletes holistically). Strategies to deliver some of these topics of interest have been discussed and illustrated in the earlier paragraphs. In addition, within each topic covered at CCE activities, it should allow coaches the flexibility to choose a more specific learning area (e.g., online search techniques on developing character in athletes) that they perceive will be beneficial to improving their coaching knowledge. In view of covering important emerging topics (e.g., mental health issues) that may not have been indicated by coaches’ interests, CoachSG may choose to include such topics as part of a plenary conference session. To improve coaches’ understanding of and response to contemporary issues (e.g., conducting remote training sessions under COVID-19), coach developers could facilitate problem-solving activities wherein coaches utilize research-informed resources and propose practical strategies relevant to their coaching context. These strategies should increase the coaching effectiveness of learners as their coaching knowledge is supplemented according to the requirements of their coaching context (e.g., holistic youth athlete development) and, subsequently, increase coaches’ buy-in to CCE participation when they are less resistant to the content taught at CCE activities (Nelson et al., 2013).

Coachess
Coaches as learners should be aware of how their participation in CCE activities will contribute toward the whole ecosystem of coach development (Trudel et al., 2010). Coaches should
appreciate that coach learning is an idiosyncratic (e.g., Cushion et al., 2010), individual (e.g., Paquette & Trudel, 2018), and social (e.g., Stoszkowski & Collins, 2014) process. Findings from the present study suggest that a coach’s sense of ownership in learning is an important factor contributing to their eventual CCE learning experience. Hence, coaches should be active in the co-creation of knowledge during collaborative activities (e.g., Culver et al., 2019; Stoszkowski & Collins, 2014), self-regulate their own learning (e.g., Koh et al., 2018), be willing to engage their mentor in professional discussions (e.g., Taylor & Sheridan, 2020), be prepared to question their own practice through critical reflections (e.g., Cushion, 2018), and constantly seek opportunities for development (e.g., Trudel et al., 2010; Van Woezik et al., 2021). Indeed, Trudel et al. (2010) contended that for “coach development to be successful, all the various agents involved—the organisation, the designers, the facilitators, the assessors, the mentors, and the coaches” (p. 385) need to develop an appreciation of the principles of coach learning. Hence, we strongly encourage coaches to be open to all learning sources (formal, nonformal, and informal) and immerse themselves in all learning situations (mediated, unmediated, and internally mediated) so that each CCE activity may be viewed as practically and contextually relevant to their practice (Stodter & Cushion, 2017).

Limitations and Future Directions

Although the findings from the present study unveiled unique insights into how the CCE program has influenced NROC Level 1 coaches, limitations exist that prompt a basis for further research. First, the small sample size (n = 124) limits the generalizability of findings. Next, taking into consideration the cross-sectional and retrospective design of the study, the researchers are unable to determine causality, and the participants’ responses may be subject to recall bias (Bryman, 2016). Future research utilizing other study designs (e.g., intervention, longitudinal) may provide a deeper understanding of the key factors that influence the learning experiences of NROC Level 1 coaches. Considering that the coaches value holistic athlete development, future research may explore the NROC level 1 coaches’ views on the importance they place on developing life skills and how this might inform future CCE activities. Finally, research that examines whether any changes to coaches’ practices occur as a result of their participation in CPD programs may provide greater insights into the effectiveness of these activities.

Conclusion

The purpose of this study was to examine the coaches’ perceptions of effective coaching, their learning experiences from the current CCE activities, their CCE learning needs and preferences, and motivations and challenges to participation in CCE activities. Findings indicate that coaches most valued intrapersonal coaching knowledge and developing their athletes holistically while prioritizing character development, had a desire to learn about topics that would enhance their role as coaches (e.g., psychology in coaching), displayed a preference to experience various learning sources (e.g., collaborative sources) and specific learning sources (e.g., guided experiential) that are well facilitated, and expressed motivations (e.g., meeting reaccreditation requirements) and barriers (e.g., cost) to CCE participation. Despite some limitations, findings from this study are able to offer some practical strategies for CoachSG to consider in providing a more engaging learning environment while improving coaches’ motivation and reducing their barriers to CCE participation. These strategies include adjusting reaccreditation requirements so that coaches will experience a variety of learning sources, improving training to create coach developers who are competent to effectively accommodate and facilitate a wide range of coaches of various biographies, utilize technology-enabled learning to enhance informal and guided experiential learning sources and existing nonformal CCE workshops, and apportion more time to cover topics (e.g., holistic youth athlete development and career development) that would be of greater relevance to NROC Level 1 coaches to perform more effectively in their roles. In view of these factors, it is perhaps crucial that the design of the CCE program should adopt a nuanced approach so that it effectively encourages coaches to keep their knowledge relevant while engendering coaches’ self-responsibility in developing themselves as lifelong learners. Indeed, Culver et al. (2019) contended that “it is impossible for any single form of coach development to meet the needs of every coach” (p. 118). Hence, it is equally important that coaches should develop an awareness of their role in influencing the coach development landscape and understand that for learning to be transformative, they should be the key orchestrators in their professional development. Beyond Singapore, it is, hence, recommended that CPD bodies be willing to invest time and resources to periodically review their curriculum while striving to understand the specific learning needs, preferences, motivations, and challenges of coaches in various contexts. In light of the COVID-19 pandemic, CPD bodies should ensure that the CPD structure is robust enough to sustain the quality of coach development during unprecedented circumstances. A creative and careful design of a CPD structure would facilitate resource maximization while encouraging coaches to be more intrinsic in their CPD participation. Ultimately, an effective CPD structure should increase the success rate in developing our coaches toward coaching mastery.

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