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Developmental Pathways of Singapore’s High Performance Basketball Coaches

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**Abstract**

The purpose of this study was to examine the developmental pathways of high performance basketball coaches in Singapore. Such information is useful in providing information about appropriate training and development programmes for high performance coaches. Nine head coaches and assistant coaches from several senior and youth national basketball teams participated in structured retrospective quantitative interviews. All coaches had at least a Level 2 coaching certificate (technical), with level 3 being the highest standard attainable in Singapore. They were experienced coaches at the developmental level (i.e., school or club team) prior to their current appointment. Results are partially consistent with previous studies that: (1) most of the coaches were competitive athletes before coaching, and (2) coaches had engaged in coaching for at least ten years prior to coaching at the elite level. All participant coaches played a variety of sports in the early stages of sport participation. They also trained and prepared for structured competition from their early primary school days. Participant coaches also acknowledged the importance of informal and non-formal learning opportunities in enhancing their coaching knowledge and skills. Unique to the Singaporean context were the absence of mentoring, the structure of the sporting system, and the support for coach development through the national sporting organisation. The results are discussed in relation to coach education and coach development.

**Key words:** Coach Education, Coach Development, High Performance Basketball Coaches

1           Developmental Pathways of Singapore's High Performance Basketball Coaches

2           A consistent theme found across the coaching literature is the critical role a coach  
3 plays in developing sport talent (Côté & Gilbert, 2009). Although the coach's influence will  
4 vary across culture, sports, and stages of talent development (Salmela & Moraes, 2003),  
5 guidance from an effective coach seems essential to becoming a successful athlete. Hence,  
6 understanding the developmental profile of coaches is warranted so that necessary support  
7 could be provided in facilitating and developing more effective coaches. In this paper, we  
8 adopted Côté and Gilbert's (2009) definition for *coaching effectiveness* as: "the consistent  
9 application of integrated professional, interpersonal, and intrapersonal knowledge to improve  
10 athletes' competence, confidence, connection, and character in specific coaching contexts" (p.  
11 316).

12           Recently, there have been a number of studies examining the developmental pathways  
13 and activities to becoming effective coaches at various levels (e.g., Ericsson, Côté, & Fraser-  
14 Thomas, 2007; Gilbert, Côté, & Mallett, 2006; Gilbert, Lichtenwaldt, Gilbert, Zelezny, &  
15 Côté, 2009; Young, Jemczyk, Brophy, & Côté, 2009). There are also studies showing that  
16 diverse experiences (as athletes and coaches) are central to becoming an effective coach in  
17 competitive sport (e.g., Bloom, 2007; Erickson et al., 2007; Schinke et al., 1995). Most of  
18 these research studies have used a mixed methodology (i.e., qualitative and quantitative)  
19 whereby coaches were asked to recall their past experiences (as athletes, coaches etc.) and  
20 elaborate upon how they learned their craft through structured interviews or questionnaires  
21 (e.g., Bloom, 2007; Young et al., 2009). Several linear stage-based explanations of coach  
22 development have also been proposed based on this body of work. For example, Salmela,  
23 Draper and Desjardins (1994) and Schinke, Bloom, and Salmela (1995) described stage  
24 models for hockey and basketball coaches that effectively captured their progression from  
25 athletes to coaches prior to high-performance coaching (Young et al., 2009).

1           Côté and colleagues demonstrated a method for analysing and reporting detailed,  
2 objective, and reliable quantitative information on individual's developmental experiences as  
3 athletes and coaches. This method was tested in four studies with a wide range of coaches  
4 across three countries (e.g., Erickson et al., 2007; Gilbert et al., 2006; Gilbert et al., 2009),  
5 which showed consistency in the findings. Coaches in these studies accumulated thousands  
6 of hours as athletes, were above average in ability, and did not specialise in only the sport  
7 they now coach. Coaches also reported investing hundreds of hours in coaching-related tasks  
8 while investing relatively little time in formal coach training (Gilbert et al., 2009).

9           Erickson et al.'s study (2007) examined the sport experiences, milestones, and  
10 educational experiences associated with high performance coaches' development. They  
11 found that experiences as athletes and early coaching in the sport the coach is coaching  
12 appear to be useful to the development of high performance sport coaches. The authors also  
13 suggested that the stages of developmental sport experiences model for high performance  
14 sport coaches might be considered a coaching equivalent to the Developmental Model of  
15 Sport Participation (DMSP; Côté, 1999; Côté & Fraser-Thomas, 2007). While there are  
16 similarities between both models in terms of initial sport experiences, the coaches in Erickson  
17 et al.'s study reported additional experiences such as leadership for team sport coaches during  
18 the competitive sport participation/introduction to coaching stage.

19           Mallett, Trudel, Lyle and Rynne (2009) noted that sports coaches participated in a  
20 range of learning opportunities (formal, non-formal, informal) that contributed to their  
21 development to varying degrees. 'Formal' learning refers to the coach education /  
22 accreditation programme (i.e., lead to award certification) where the curriculum design,  
23 delivery, content, and assessment tasks were significantly controlled. Learners in these  
24 formal situations have less control and influence over what information is and should be  
25 delivered. 'Non-formal' learning refers to "organised learning opportunities outside the

1 formal education system, which tend to be short-term, voluntary, less formal in nature, and  
2 generally lack prerequisites” (Merriam, Caffarella, & Baumgartner, 2007, p.30). For  
3 example, coaching clinics or workshops where expert coaches / instructors share ideas (e.g.,  
4 drills, strategies) with participant coaches to enhance their coaching knowledge. Such  
5 platforms provide opportunities for participants to interact with peers and as well as expert  
6 coaches / instructors, especially on coaching matters. These non-formal learning  
7 opportunities can be ongoing, highly varied and very extensive (Mallett et al., 2009). Lastly,  
8 ‘Informal’ learning which some refers to ‘incidental learning’, where coaches learned through  
9 their day-to-day work. Several recent studies have highlighted the significant contributions  
10 of informal learning experiences to coaches’ development at different coaching environments  
11 (e.g., Lemyre, Trudel, & Durand-Bush, 2007; Mallett et al., 2009; Wright, Trudel, & Culver,  
12 2007).

13         Gilbert et al. (2009) noted that while earlier studies on coach development provided  
14 insight into types of learning; however, more longitudinal data are needed to extend our  
15 understanding of how the developmental activities contribute to the overall developmental  
16 process of coaches in specific coaching contexts. Furthermore, Young et al. (2009) revealed  
17 that while similar results have been reported in Canada, the United States and Australia, the  
18 nuances of culture and context should not be ignored. In a review of coaching science  
19 research in Asia, Koh (2009a) reported that the coaching science and nation-wide formal  
20 coach education programmes in Asia are in their infancy stage. He suggested that this is  
21 probably due to a lack of governmental support as most of the Asian countries are considered  
22 developing countries and investment in sports development might not be one of the  
23 government’s priorities. In addition, he noted that most of the national team coaches are  
24 hired because of their previous playing experience rather than professional qualifications.  
25 The lack of government financial support and an appropriate system to facilitate coaches’

1 development might partially account for the poor performance (i.e., rankings) of Asian  
2 countries in major international championships. For example, with reference to the combined  
3 basketball world ranking for men and women in 2009, China (8<sup>th</sup>) is the only Asian country  
4 that ranked in the top ten. The remaining Asian countries fared poorly compared to their  
5 western counterparts such as the United States, Spain and Australia (FIBA, 2009).  
6 Nevertheless, research conducted in Canada, Australia and the United States cannot be  
7 generalised to the Asian context without consideration of cultural influences including the  
8 extent of government financial support, the national sports system, and the provision or  
9 delivery of coach education programmes.

10           In recent years, Singapore has shown increased interest in making an impact on the  
11 world's sporting arena. The establishment of the Sporting Culture Committee in 2006 is  
12 evidence of the commitment from the government to encourage more Singaporeans to: (a)  
13 actively participate in sports, and (b) excel in sports to bring glory to the country. To achieve  
14 these goals, the Government has invested \$300 million in the Sporting Singapore Fund to  
15 finance sports development from 2005 to 2010. In order to encourage athletes to excel, the  
16 government has also implemented the Multi Million Dollar Award Program to reward medal  
17 winning athletes. Athletes from sailing, table tennis, and bowling, just to name a few, have  
18 made their mark on the world sporting map and had benefited from this scheme. In this  
19 regard, we should recognise that the coach plays a pivotal role in Singapore's sporting  
20 success story. Hence, the developmental profile of high performance coaches should be  
21 critically examined.

22           Previous research (e.g., Erickson et al., 2007; Salmela, 1995) provides support that the  
23 sporting experiences and educational activities played an important role in high performance  
24 coaches' development (e.g., the decision to take up coaching). Therefore, the present study  
25 sought to examine the developmental paths and activities of high performance basketball

1 coaches in Singapore. Specifically, two key research questions were addressed in the present  
2 study: (1) what experiences are useful for one to become a high-performance coach? and (2)  
3 what stages of development characterise a sample of high performance coaches in Singapore?  
4 Moreover, the demographic data provide useful information to understand coach  
5 development in this sample of coaches and identify current limitations in coach education and  
6 development.

## 7 **Method**

### 8 **Participants**

9 Nine coaches from the six national basketball teams, including the senior squads,  
10 Under-18 squads, and Under-16 squads, for both men's and women's teams (7 Men;  $M =$   
11 42.0 years,  $SD = 8.8$ ) participated in this study. Of the nine participants, six were holding  
12 head coach positions. In terms of coaching qualifications, all national coaches were at least  
13 Level 2 coaching certified (technical), with Level 3 being the highest standard in Singapore.  
14 All participants were experienced coaches at the developmental level (i.e., school or club  
15 team) prior to their current appointment ( $M = 13.0$  years). Among the nine coaches  
16 interviewed, the most senior coach had 23 years of experience working with elite players.  
17 The youngest assistant coach, who has just retired from the national squad as a player, had  
18 three years of coaching experience at this level. All the participants were recruited through  
19 the Basketball Association of Singapore and they voluntarily agreed to participate in this  
20 study.

### 21 **Measures**

22 An interview guide, developed by Gilbert et al. (2006), with three separate sections  
23 of questions was used specifically for the present study. The interview procedure is  
24 retrospective and quantitative in nature. The first section of the interview guide collected  
25 demographic information, level of education, coaching certification, and membership in

1 coaching-related organisation. The second section collected data on participants' previous  
2 experiences as athletes (e.g., sports they participated in; years of commencing and finishing  
3 each sport; number of seasons participated at various level of competitions such as  
4 recreational, developmental and elite; sport leadership roles). The last section of the  
5 interview guide focused on collecting participants' coaching experience. Participants were  
6 asked to provide information on the sports that they have coached, years of commencing and  
7 finishing for each sport, number of seasons coached, their coaching role (head coach or  
8 assistant coach), age and gender of athletes coached, level of competition (e.g., recreational,  
9 developmental or elite), number of competitions per season etc. The three sections of the  
10 interview guide are distinct but interrelated. The information gathered from the three sections  
11 represents the coaching process as conceptualised in the Coaching Model (Côté, Salmela,  
12 Trudel, Baria, & Russell, 1995). The interview questions were based on principles of reliable  
13 and valid retrospective data collection outlined by Côté, Ericsson and Law (2005).

#### 14 **Data Collection**

15       After receiving University ethical clearance for the study, the first author contacted  
16 the participants via e-mail or telephone and briefed the participants on the purpose of this  
17 study and their possible involvement. Interviews were conducted at a place that was  
18 convenient to each participant. Total time taken to conduct an interview was between 90 and  
19 120 minutes. All participants gave approval for the researcher to audio-tape all verbal  
20 communication for future data analysis.

21       The retrospective interview procedure outlined by Gilbert et al. (2006) was used to  
22 collect quantitative information from coaches that could potentially be verified using external  
23 sources, specifically to each developmental activity. Only objective, quantifiable and  
24 potential verifiable data were collected. Data were gathered in the simplest units possible to  
25 make the recall as easy, objective and straight forward as possible (Erickson et al., 2007).

1 For example, to determine total number of games played / coached for each team or level,  
2 participants were only required to recall the number of seasons played / coached for each  
3 team / level.

#### 4 **Data analysis**

5 Data related to experiences prior to becoming high performance basketball head  
6 coaches and assistant coaches were selected for data analysis. Specifically, only those  
7 deemed representative of separate, discrete experiences were chosen and redundant items  
8 were ignored (Erickson et al., 2007), resulting in a total of 12 and 9 items for athletic and  
9 coaching experiences respectively.

10 For the athletic experiences, the total number of years played at various levels and the  
11 starting age for that particular level were identified. In terms of assigned leadership roles  
12 such as captain or vice captain, participants were asked to report the highest position held at  
13 each level of participation. If a coach recalled no prior experience at a particular level or  
14 sport, they were instructed to report a “0” for both columns. In addition, participants were  
15 asked to indicate the highest self-ratings of ability out of a 10-point rating scale for each level  
16 of participation (Erickson et al., 2007).

17 Minimum scores, maximum scores, means and standard deviations were calculated  
18 for each item. In addition, coaching position (i.e., head coach and assistant coach) held at  
19 each level was identified and analysed. Coaches were also asked to report the total number  
20 of hours spent in professional development such as coaching-related training (e.g., clinics,  
21 workshop or coaching courses). The number of mentor(s) that they have worked with  
22 throughout their coaching career was also recorded and analysed.

#### 23 **Results**



1 participant coach represented his school at the developmental level for a third sport during his  
2 secondary school days.

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Insert Table 2 Here

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6 Results of the present study also show that all the participants represented their  
7 schools or clubs and competed in structured / organised competitions at the developmental  
8 level in basketball. During this developmental period, they rated themselves as highly  
9 capable athletes ( $M = 8.3$  out of possible of 10,  $SD = 1.3$ ). Almost half of the participant  
10 coaches were given leadership roles such as captain or vice captain at some stage in their  
11 sport participation. All coaches had most of their sporting experiences at the developmental  
12 level ( $M = 15.0$  years,  $SD = 8.2$ ), followed by the recreational level ( $M = 3.9$  years,  $SD = 2.0$ )  
13 and the high performance level ( $M = 7.4$  years,  $SD = 4.4$ ). Furthermore, of the nine  
14 participant coaches in this study, two of them did not have any experience at the elite level.

### 15 **Coaching Experiences**

16 A summary of the participants' coaching experiences in basketball is presented in  
17 Table 3. All participant coaches reported more extensive time coaching basketball at the  
18 developmental level ( $M = 19.4$  years,  $SD = 11.4$ ) ranging from 8 to 35 years, compared to the  
19 recreational and or elite level. Two out of nine participants were assistant coaches at the  
20 developmental level, and five out of nine coaches were assistant coaches at the elite level  
21 before they were appointed as the head coach. The starting age for participant coaches  
22 coaching at the high performance level ranged from 26 to 49 years old ( $M = 33.2$  years,  $SD =$   
23  $7.2$ ). In terms of training hours such as attending formal coach education courses, five  
24 participant coaches reported between 70 to 800 hours per year ( $M = 110.0$  hours / annum,  $SD$

1 = 267.4). The remaining four coaches did not report having any forms of formal training in  
2 coaching.

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4 Insert Table 3 Here

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6 Generally, coach training courses were arranged by the association (BAS) for its full-  
7 time coaching staff as part of the professional development to improve coaching practices. In  
8 addition, some part-time coaches were also given sponsorships by BAS (average one coach  
9 per year) to attend coaching courses arranged by the association. Three of the nine coaches  
10 from the present study were provided formal learning opportunities by the association. In  
11 contrast, other coaches independently sourced appropriate coaching courses and paid for all  
12 expenses, reflecting self-motivation for continuing professional development. Taken together,  
13 the total training hours in formal coach education for full-time staff and part-time coaches  
14 sponsored by BAS was higher than other coaches involved in the present study.

### 15 **Stages of Development**

16 Based on the results in this study, high performance coach development was generally  
17 classified into five stages (refer to Figure 1).

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19 Insert Figure 1 Here

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21 The first stage refers to early sport participation when athletes took part in non-  
22 competitive sports, especially when they were at the primary school between the ages of 8  
23 and 12 years ( $M=10.8$  years,  $SD = 1.8$ ). During this stage, most of them took part in at least  
24 two sports. Nevertheless, it was noted that four of the nine coaches in the present study were

1 also involved in competitive sport participation (2 Categories: 13 years old and below, 11  
2 years old and below) organised by the Singapore Primary Schools Sports Council.

3         The second stage refers to competitive sport participation where structured training  
4 and competitions were organised, which is typically between 13 and 18 years of age ( $M =$   
5 14.3 years,  $SD = 1.4$ ). This was the period during which participants represented their  
6 secondary schools in inter-school competitions organised by the Singapore Schools Sports'  
7 Council. In addition, some participants had represented their basketball clubs and competed  
8 in competitions organised by the National Sport Association (NSA). Four of the nine  
9 coaches represented their schools and competed in a second sport at the inter-school level. It  
10 was also noted that most of the participants were given leadership opportunities (i.e., captain,  
11 vice captain) during this period of participation.

12         The third stage was the highest level of competitive participation where athletes  
13 represented their country for competitions. The average age for initial elite participation was  
14 19.3 years, and the average number of years of participation at this level was 7.0 years.  
15 Seven of the nine participants interviewed had competitive experience at the elite level. It  
16 was during this stage that most coaches first gained their initial coaching experience. Seven  
17 of the nine coaches also coached their club teams during this stage of development.

18         The fourth stage referred to part-time coaching. Eight of the nine coaches had  
19 experienced coaching at the recreational level ( $M = 2.0$ ,  $SD = 1.0$ ). The average age of  
20 coaches at this level was 22.7 years ( $Range = 18 - 28$  years). It was noted that most  
21 participant coaches spent more time coaching at the developmental level than other levels.  
22 The number of years coaching at this level ranged from 8 to 35 years ( $M = 19.4$  years,  $SD =$   
23 11.4). Seven of the nine coaches started part-time coaching position in schools. They were  
24 given coaching allowances (remuneration) on an hourly basis, except for two of them who  
25 were teacher-coaches at their own schools. Only one coach reported having interaction with

1 mentor during this stage and some started attending formal coach education training (e.g.,  
2 clinics and courses) during this period.

3 The fifth stage associated with high performance coaching work. The starting age  
4 coaching at this level ranged from 26 to 49 years ( $M = 33.2$  years,  $SD = 7.2$ ) and the number  
5 of years coaching at this level ranged from three to ten years ( $M = 5.1$  years,  $SD = 2.4$ ).  
6 These high performance coaching positions were usually full-time positions offered by the  
7 Basketball Association of Singapore (BAS).

## 8 Discussion

9 The purpose of this study was to gather demographic information and the athletic and  
10 coaching experiences of the high performance basketball coaches so as to identify their  
11 pathways to high performance coaching in Singapore basketball. By developing an  
12 understanding of the participant coaches' sporting and coaching experiences, we might be  
13 able to design specific programmes and/or coaching courses to aid their professional  
14 development and, in turn, improve the quality of coaching work. In addition, understanding  
15 the range of learning opportunities and their contribution to coaches' development may  
16 provide useful information to inform policies and sport organisations in facilitating high  
17 performance coaches' development. Findings of high performance basketball coaches'  
18 sporting and coaching experiences, as well as coach education / learning in Singapore, will be  
19 discussed with reference to previous stage-based models of coach development, and related  
20 studies on coach education/learning found in the literature (e.g., Côté, Baker, & Abernethy,  
21 2007; Côté & Gilbert, 2009; Erickson et al., 2007; Gilbert et al., 2009; Mallett et al., 2009;  
22 Young et al., 2009).

### 23 Developmental Sport Experiences

24 The profile of Singapore's high performance coaches supports the findings from the  
25 literature (e.g., Côté & Gilbert, 2009; Gilbert et al., 2009; Young et al., 2009) that: (a)

1 coaches were competitive athletes in the sport they coached, and (b) they had attained at least  
2 10 years of coaching experience prior to coaching at the elite level. Nevertheless, some of  
3 the participant coaches also trained and prepared for structured inter-school competition from  
4 their early primary school days, which is unique in Singapore's education system. The result  
5 is different from those reported in earlier studies where children (below 12 years old) are  
6 usually sampling different type of sports in a non competitive environment (e.g., Côté &  
7 Fraser-Thomas, 2007; Erickson et al., 2007).

8 **Sporting experiences.** Most of the participants in the present study took part in at  
9 least two non-competitive sports when they were in primary school (below 13 years old),  
10 which is consistent with the findings of Erickson et al. (2007); however, it was noted that four  
11 of the nine coaches in the present study were also involved in competitive sport participation  
12 (2 Categories: 13 years old and below, 11 years old and below) organised by the Singapore  
13 Primary Schools Sports Council, which contradicts what was reported by Erickson and  
14 colleagues. The inter-primary school competition is a unique sports system in Singapore,  
15 which is an important annual event in the school's sports calendar. The competition is highly  
16 competitive and individual schools compete for the Sustained Achievement Award (SAA) by  
17 the Ministry of Education (MOE) if they are able to maintain a consistent performance results  
18 over three years (i.e., achieve top four positions for two sports in two divisions). Within this  
19 norm-referenced competitive context, school leaders, coaches and athletes are likely to be put  
20 under pressure to perform.

21 Currently, the Singapore Primary Schools Sports Council is organizing structured  
22 competitions for 27 sports that usually last up to four months, depending on the nature of  
23 each sport and the number of participants involved. Young children are screened and begin  
24 to specialise in the sport for which they have been identified as potential school  
25 representatives. External coaches are hired to train and prepare the school team athletes to

1 compete and perform at the inter-school competition. Such a system might be considered as  
2 potentially problematic because research shows that early specialisation and investment in  
3 competitive sports may result in burnout, stress and dropout (e.g., Côté & Gilbert, 2009). In  
4 the present study, only four coaches competed in structured competition when they were in  
5 primary school. Conversely, all participant coaches were involved in at least two sports at  
6 the recreational level during early sport participation (below 13 years old). As all children in  
7 Singapore are required to attend 10 years compulsory education and are likely to be involved  
8 in sports, policy makers may need to review the current inter-primary school competition  
9 system to ensure that athletes do not suffer burnout, stress and dropout due to structured  
10 competitions at their younger age. The reason is because some of these athletes may progress  
11 to the elite level, or become a coach at the later stage of development and involvement in  
12 sports (Saga, 1989). Accordingly, children should enjoy the sporting experience while in  
13 school so as to facilitate their long term participation and subsequent development.

14         The results of the present study are consistent with the findings from several studies  
15 (e.g., Côté & Gilbert, 2009; Gilbert et al., 2009; Young et al., 2009), which showed that  
16 coaches accumulated thousands of hours as athletes in competitive sports. For example,  
17 Young et al. (2009) examined the developmental experiences and learning activities of the  
18 Canadian track and field from club, provincial and national coaches and found that national  
19 track and field coaches had 11.8 years of former athletic career prior to their current coaching  
20 position. This result was similar to that found with samples of Australian high performance  
21 athletics coaches (e.g., Lynch & Mallett, 2006) and Canadian track and field coaches (e.g.,  
22 Gilbert et al., 2006). It appears to be common across the studies that a minimum 10 years of  
23 sport participation is a pre-requisite to be a national or high performance coach. Furthermore,  
24 it was noted that coaches in the present study were often the key / first-string players and

1 were self-reported as highly skilled in relation to their peers. The results are consistent with  
2 those reported in the sports coaching literature (e.g., Gilbert et al., 2006; Lemyre et al., 2007).

3 Salmela (1995), Erickson et al. (2007), and Young et al. (2009) found that experience  
4 as elite athletes in the sport that they now coach was not a necessary pre-requisite to high  
5 performance coaching. Results of the present study are partially consistent with this  
6 observation. In this study, two coaches did not compete at the elite level. Nevertheless, it  
7 should be noted that about 77.7% of the participant coaches in the present study had elite  
8 level experience as an athlete in basketball. This elite playing experience might be useful to  
9 becoming high performance coaches (e.g., Erickson et al., 2007; Schinke et al., 1995; Young  
10 et al., 2009); for example, in understanding athletes' needs and concerns, as well as high  
11 performance training and coaching aspects.

12 In the present study, it was also noted that coaches had experience playing other  
13 sports (individual or team sports) as an athlete, which was found in previous studies (e.g.,  
14 Erickson et al., 2007; Gilbert et al., 2006; Lynch & Mallett, 2006). These varied sporting  
15 experiences may have aided their development as players and as coaches, especially the  
16 experience at the developmental level where they had opportunities to observe the coaching,  
17 teaching, and interpersonal practices of different coaches. At the same time, they probably  
18 acquired some rudimentary coaching knowledge, skills and values (Sage, 1989; Werthner &  
19 Trudel, 2006). The opportunity to sample a variety of sports may provide a range of  
20 experiences that may have a positive effect on the athletes' motivation and interest in future  
21 sport coaching (Gilbert et al., 2009).

22 All participant coaches had competed in basketball at least at the developmental level.  
23 The results are consistent with earlier studies found in the literature (e.g., Erickson et al.,  
24 2007; Gilbert et al., 2009; Lynch & Mallett, 2006). For example, Gilbert et al. (2009)  
25 reported a significant correlation between the time spent as an athlete (and becoming a coach)

1 and coaching success. Sporting experiences might produce a respect and admiration for  
2 coaches, and this may strongly influence the decision to become a coach (Sage, 1989). Others  
3 believe that this experience helps to familiarise and prepare future coaches (e.g., Cushion,  
4 Armour, & Jones, 2003; Young et al., 2009). Taken together, the athletic sporting  
5 experiences appear to be important for the development of high performance coaches (e.g.,  
6 Côté & Gilbert, 2009; Gilbert et al., 2006; Gilbert et al., 2009; Lemyre et al., 2007).  
7 Consequently, coaches and sport organisations should aim to create and provide positive  
8 experiences to athletes so that they are motivated to stay active in sport participation, and are  
9 inspired to become involved in coaching later (Saga, 1989).

10         **Coaching experiences.** Only four of the nine coaches in the present study reported  
11 that they had coaching experiences at the recreational level. This suggests that coaching at  
12 the recreational level may not be necessary for the development of high performance coaches  
13 (Côté, Young, North, & Duffy, 2007; Lyle, 2002; Trudel & Gilbert, 2006). Also, high  
14 performance basketball coaches in Singapore were clearly not coaching the same diversity of  
15 sports they had played, which is consistent with previous findings (Côté & Gilbert, 2009;  
16 Erickson et al., 2007; Lynch & Mallett, 2006). The results of the present study are consistent  
17 with previous studies that most coaches had some coaching experience prior to becoming a  
18 high performance head coach (e.g., Erickson et al., 2007; Trudel & Gilbert, 2006), which is  
19 not surprising.

20         It was interesting to note that all participants had extensive experience (approx. 19  
21 years) coaching school team athletes at the developmental level. The results were not  
22 surprising as schools are a common place to experience coaching and at the same time,  
23 receive remuneration for coaching work in Singapore. According to a survey conducted by  
24 the Singapore Sports Council in 2004, 96.9% of schools survey reported that they had  
25 employed external coaches to train their school team athletes (School Sports, 2005). These

1 coaches are in high demand as their key task is to help athletes excel in the inter-school  
2 competitions organized by the Singapore Schools Sports Councils for which there is public  
3 recognition and reward for a schools' success. Perhaps, this could be the contributing factor  
4 for the age difference in part-time early coaching between the present study (18-30 years) and  
5 those reported by Erickson et al. (2007) (24-28 years). Coaches in Singapore might be more  
6 driven by externally-regulated rather than more internally-regulated motives (Deci & Ryan,  
7 1985). In addition, anecdotal evidence suggests that coaches with relevant sporting  
8 experiences (e.g., representation at school, club or state level in the sport they are coaching)  
9 were generally paid better, especially if they had experience at the elite level. It seems that  
10 allowing retiring and retired elite level athletes opportunities to be involved with coaching  
11 might be highly beneficial to them. Hence, giving these athletes the essential coaching  
12 knowledge and helping them balance the time spent on coaching and coping with the  
13 demanding training schedule is considered of utmost importance for the development of  
14 future elite coaches as suggested by Erickson et al. (2007).

15 Findings from the present study suggest that the pursuit of a coaching career tends to  
16 occur during or after the athletes retire from competitive sport. Typically, coaches obtained  
17 formal coaching qualifications through formal coaching courses. In addition, the average  
18 starting age for high performance coaching position ranged from 26 to 49 years ( $M = 33.2$ ,  
19  $SD = 7.2$ ), which is four years later than that reported in previous studies (e.g., Côté, 1999;  
20 Côté & Fraser-Thomas, 2007; Erickson et al., 2007). The reason for the difference in starting  
21 age (i.e., elite coaching) could be due to the national service that is compulsory for all male  
22 Singaporeans. Typically, all male Singaporeans are enlisted to serve a two-year full-time  
23 national service when they are 19 years old, which may delay athletes' entry into coaching  
24 post-retirement from elite sport participation and development. Moreover, there are probably  
25 limited opportunities in Singapore compared with the collegiate system in North America.

## 1 **Coaches' Learning Opportunities**

2 Previous literature has reported that coaches participate in a range of learning  
3 opportunities (e.g., formal, non-formal and informal), which differentially contribute to their  
4 development (Mallett, et al., 2009; Nelson, Cushion, & Potrac, 2006). Gilbert, Gallimore and  
5 Trudel (2009) suggested that coach learning is a social process and non-formal learning such  
6 as day-to-day learning experiences in the field has been a valuable method for learning how  
7 to coach. Hence, all forms of coach learning should be embedded in specific coaching  
8 contexts.

9 **Formal learning.** In a study conducted by Gilbert et al. (2009) on successful high  
10 school basketball and cross-country coaches, the authors found significant between-sport  
11 differences in the mean annual number of hours spent in coach education programmes. They  
12 suggested that due to the popularity and economic impact of basketball in the United States,  
13 basketball coaches were given additional opportunities to attend basketball clinics throughout  
14 the year as opposed to the cross-country coaches. Research has also shown that formal  
15 learning through coach education / accreditation programmes is often limited in the scope of  
16 their achievements (e.g., Abraham & Collins, 1998; Lyle, 2007). For the more elite coaches,  
17 such programmes have been shown to be ineffective in providing them with the knowledge  
18 and skills they need to be effective coaches (Cushion et al., 2003; Lyle, 2002; Mallett et al.,  
19 2009; Trudel & Gilbert, 2006). In the present study, it was noteworthy that the total number  
20 of hours spent in attending formal coach development training (e.g., coaching courses,  
21 coaching clinics) varied significantly, which might be due to several factors including the  
22 range of opportunities available, coach motivation, and time constraints (Gilbert et al., 2009;  
23 Young et al., 2009). The BAS provided three of the nine coaches' formal learning  
24 opportunities as part of their commitment to professional development. Hence, the formal

1 training hours for this group of coaches was higher than that reported previously in the  
2 literature (e.g., Lynch & Mallett, 2006)

3       **Non-formal learning.** Gilbert et al. (2009) suggested that one of the greatest benefits  
4 of participating in non-formal coach education is perhaps an increase in coaching efficacy.  
5 This content is shared by coaches involved in the present study. Therefore, government  
6 agencies and national sport associations should aim to initiate and facilitate more non-formal  
7 learning opportunities for high performance coaches, at the same time, ensure that they are  
8 relevant and useful so that coaches develop competence and confidence in delivering quality  
9 coaching sessions (Young et al., 2009). In addition, deliberate efforts by national sport  
10 associations are needed to facilitate national coaches to acquire knowledge and competencies  
11 continuously throughout their career in order to benefit coaches and their athletes.

12       **Informal learning.** Informal learning opportunities has gained acceptance within the  
13 field of education (e.g., Hodkinson & Hodkinson, 2005), workplace (e.g., Billett, 2004; Boud  
14 & Garrick, 1999), and sport coaching (e.g., Cushion et al., 2003; Gilbert & Trudel, 2001;  
15 Mallett et al., 2009; Nelson et al., 2006). It was noted that the coaching and leadership  
16 experiences that the participant coaches had prior to high performance coaching might help in  
17 their informal learning experiences. For example, (a) reflection-in-action (i.e., during the  
18 action present such as during games or practices), (b) reflection-on-action (i.e., within the  
19 action-present but not in the midst of activity such as after games or practices), and (c)  
20 retrospective reflection-on-action (i.e., outside of the action present such as at the end of the  
21 season) as suggested by Gilbert and Trudel (2001). These three forms of reflection under  
22 different environments and coaching situations presented different learning opportunities for  
23 coaches to gain knowledge and exposure to reflective practices, which were likely to  
24 influence their coaching careers (Erickson et al., 2007).

1 Informal learning opportunities may occur through mentoring. In the present study,  
2 only one coach received formal mentorship from the head coach of the professional  
3 basketball team in Singapore. The mentorship opportunity in Singapore is much lower  
4 compared with the findings from previous studies (e.g., Gilbert et al., 2009; Lynch & Mallett,  
5 2006). The assistant coach in the present had opportunities to observe his head coach in  
6 action during training sessions and games. Subsequently, he was able to challenge and / or  
7 affirm his own coaching practices and consequently refine his coaching behaviours over time  
8 if appropriate (Rynne, Mallett, & Tinning, 2006). In addition, through interactions and the  
9 exchange of ideas between the head coach and assistant coach, new ideas on coaching  
10 knowledge might be generated. This kind of informal learning at work is an important source  
11 of experiential learning for high performance coaches, especially for assistant coaches  
12 (Young et al., 2009). For example, Young and colleagues provided evidence that more skilled  
13 Canadian track and field coaches had received more mentoring throughout their career than  
14 lesser skilled coaches. The results were consistent with earlier studies conducted on  
15 Australian high performance athletics coaches (Lynch & Mallett, 2006) and Canadian  
16 university coaches in individual sports (Erickson et al., 2007). Although mentoring appears  
17 to be useful in enhancing coaching knowledge and practices, it was uncommon in this sample  
18 of Singapore basketball coaches. A key reason for the limited use of mentors in this cohort  
19 might be associated with 'senior / master coaches' protecting their 'sacred' knowledge as  
20 coaching can be a potential career even at the recreational or developmental levels. This is  
21 mainly due to the unique sports system in Singapore that places high demand on external  
22 coaches. Coaches may be too 'afraid' of sharing knowledge, or mentoring future coaches  
23 who may be contesting for the same job with them in future (<sup>1</sup>Hoo, personal communication,  
24 April 16, 2010). The exact reasons are unknown and therefore, worthy of future investigation.

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<sup>1</sup> Hoo is currently the Honorary Secretary of the Basketball Association of Singapore (BAS). He is one of the

1           In a series of studies, Mallett and colleagues examined how elite coaches learned for  
2 and during coaching work and found that much of coaches' learning was informal (Mallett, et  
3 al., 2009). They reported that although such informal learning opportunity is authentic and  
4 contextualised, it might suffer from a lack of quality control, direction, feedback, and  
5 innovation (Mallett et al., 2009). In addition, coaches may have difficulties accessing some  
6 opportunities due to the contested nature of sport at all levels (e.g., Lemyre, et al., 2007;  
7 Mallett et al., 2009; Wright et al., 2007). Findings from the present study suggest that  
8 creating a supportive informal learning environment and identifying more experienced  
9 coaches who are willing to be mentors might help to nurture high performance coaches.  
10 Accordingly, sports associations and policy makers are encouraged to consider facilitating  
11 learning communities that promote sharing of coaching knowledge (Gilbert et al., 2009),  
12 which includes developing mentoring systems to promote the culture of sharing within the  
13 basketball community so as to facilitate coaches' learning and development.

#### 14 **Implications and Limitations**

15  
16           The findings of the present study provide some insight into the context of  
17 Singaporean high performance sport. More specifically, the findings provide some evidence  
18 to support future coach development in Singapore, especially in basketball.

19           First, the findings from this study reinforce calls by previous researchers (e.g.,  
20 Cushion et al., 2003; Trudel & Gilbert, 2006) to ensure that coach education programmes  
21 designed for coaches are relevant and specific to coaches. The idea proposed by Gilbert et al.  
22 (2009) on creating professional learning communities to complement large-scale coach  
23 education programmes is worthy of consideration. Consequently, policy makers in coach  
24 education programmes should review the relevance of learning experiences to the reported  
25 coach development needs of coaches.

1           Second, athletes' experience in sport participation may influence their decision in  
2 taking up coaching (e.g., Cushion et al., 2003; Gilbert et al., 2006; Gilbert et al., 2009;  
3 Lemyre et al., 2007; Young et al., 2009). Hence, creating and providing a positive sport  
4 experience for athletes is important, as it is likely to promote self-motivation to actively  
5 engage in the sport as a coach at some later stage (Sage, 1989).

6           Finally, the importance of self-evaluation and peer-evaluation should be promoted to  
7 facilitate coaches' learning through appropriate reflection (Koh, 2009b). Appropriate means  
8 can be used to collect relevant and contextual qualitative and quantitative data from athletes  
9 and coaches to assist in the reflection process. Subsequently, coaches should be guided in  
10 using reflective strategies to problem-solve coaching issues and subsequently promote  
11 personal and professional growth. Mentors, confidantes, and coaching communities can  
12 facilitate the reflective process and subsequently mediate or guide the learning opportunities  
13 (Mallett, et al., 2009).

14           While there are some common means through which coaches develop across contexts,  
15 unique environmental factors do exist and should be accommodated. The significant  
16 contribution of the current study is that it examined the developmental pathways of high  
17 performance coaches in an Asian context, which was not found in the existing sport coaching  
18 literature. This study also highlighted some of the unique systems in Singapore such as the  
19 inter-school competitions, the absence of mentoring, the support for coach development  
20 through the national sporting organisation, and compulsory two-year national service for  
21 healthy male Singaporeans that influence the development of basketball athletes and high  
22 performance coaches.

23           Despite some contributions to the literature, there are some limitations of this study.  
24 First, this study only focused on the developmental pathways of high performance basketball  
25 coaches in Singapore. As such, caution is warranted in generalising the findings to other

1 sports within Singapore. In addition, cultural differences should be considered when viewing  
2 the results. The results may be different when the study is conducted in other countries with  
3 established sports systems and more advanced coach education and development programmes.  
4 To examine the effects of these findings in the medium term requires some further  
5 examination (perhaps some ongoing monitoring) of high performance coach development in  
6 Singapore basketball. Moreover, further examination of other sports within Singapore is  
7 encouraged.

### 8 **Conclusion**

9 The purpose of this study was to identify the sporting and coaching experiences of  
10 high performance coaches and their developmental pathways to high performance coaching.  
11 Results of this study shed some light on the important activities that seem critical to coaches'  
12 developmental pathways in high performance settings using a small sample in Singapore.  
13 Future research should continue to examine the pathways of high performance coaches in  
14 other cultures and contexts, especially in Asia, to enrich our knowledge in this body of  
15 research, and provide guidance to policy makers of the necessary support and training to  
16 groom future high performance coaches more effectively.

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1 Table 1

2

3 *Singapore High Performance Basketball Coaches' Profile (Head and Assistant Coaches)*

4

Coaches	Gender	Age	Highest Educational Qualification	Highest Coaching Qualification (Technical)	Recreational	Developmental	Elite
1	Male	40	1	2	0	25	5
2	Female	32	3	2	0	20	4
3	Male	56	4	3	2	32	10
4	Male	36	4	2	2	35	9
5	Male	44	4	3	3	15	5
6	Male	41	3	2	0	9	7
7	Female	29	5	3	0	8	3
8	Male	60	4	2	4	35	3
9	Male	52	2	2	0	9	4
	<i>Mean</i>	43.3			1.4	19.4	5.1
	<i>SD</i>	10.7			1.5	11.4	2.4

5 *Key: Qualifications – Normal Level = 1; Advance Level = 2; Diploma = 3; Bachelor's*

6 *Degree = 4; Master's Degree = 5*

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1 Table 2

2

3 *Sporting Experiences of High Performance Basketball Coaches (Head and Assistant Coaches)*

4

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Item	Min.	Max.	M	SD	<i>f</i>
Number of years played at recreational level	2	8	3.9	2.0	9/9
Starting age at recreation level	8	12	10.8	1.8	9/9
Highest leadership assigned at recreational level	2	3	2.7	0.5	9/9
Highest self-rated ability recreational level	6	8	6.9	0.8	9/9
Number of years played at developmental level	2	32	15.0	8.2	9/9
Starting age at developmental level	13	18	14.3	1.4	9/9
Highest leadership assigned at developmental level	1	3	1.7	1.0	9/9
Highest self-rated ability at developmental level	5	9	8.3	1.3	9/9
Number of years played at elite level	1	14	7.0	4.4	7/9
Starting age at elite level	18	24	19.3	4.5	7/9
Highest leadership assigned at elite level	1	3	2.3	3.0	7/9
Highest self-rated ability at elite level	7	9	8.0	1.0	7/9

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5 *Note: f = frequency of non-zero responses*

6

1 Table 3

2 *Coaching Experiences of High Performance Basketball Coaches (Head and Assistant Coaches)*

Item	Min.	Max.	M	SD	<i>f</i>
Number of years coaching at recreational level	1	4	2.0	1.0	4/9
Starting age coaching at recreational level	18	28	22.7	3.2	4/9
Number of years coaching at developmental level	8	35	19.4	11.4	9/9
Starting age coaching at developmental level	19	30	24.3	3.6	9/9
Number of years coached as AC at developmental level	2	6	4.0	1.6	4/9
Number of years coaching at elite level	3	10	5.1	2.4	9/9
Starting age coaching at elite level	26	49	33.2	7.2	9/9
Number of years coached as AC at elite level	2	8	3.0	2.2	5/9
Total hours of formal coach development training	70	800	110.0	267.4	7/9

3 *Note: AC=Assistant Coach, *f* = frequency of non-zero responses*

1 Figure Caption

2 *Figure 1.* Stages of Development for High Performance Basketball Coaches. Adapted from

3 Erickson, Côté, & Fraser-Thomas (2007).

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Early Sport Participation (Age 8 – 12)

- Diverse sports participation
- Participation at recreational level with no formal/ organized competitions
- Early participation in competitive sport



Competitive Sport Participation (Age 13 – 18)

- Participation in at least one sport at a competitive level
- Usually focuses on one sport, eventually coaching that particular sport, but often play and/ or represent in other sports at competitive level



Highly Competitive Sport (Age 18 – 24)

- Competitor in sport at an elite level (e.g., national team)



Part-time Coaching (Age 18 - 30)

- Coaching part-time at developmental level (e.g., schools, clubs etc.)
- Engage in formal coaching training and development



High Performance Coaching (Age 26 - 49)

- Retirement from elite sporty participation
- Employment as an assistant / head coach (high performance coaching) position