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The nature of sports coach development in China

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4   The nature of sports coach development in China: What are we trying to achieve?

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27   **Abstract**

28   Coach education and continuing career development have become a significant focus of global

29   discussion within the sport domain. Current mainstream strategies for developing and assessing

30   coaches in most countries, including China, are based on competency-based systems. However,

31   there are many shortcomings of this system, especially when considering the varied practical

32   challenges and needs of coaches and athletes; in short, such an approach does not facilitate enough

33   adaptability. The purpose of this article is to critically review the literature, exploring both

34   competence- and expertise-based coach development systems and their implications for coaching

35   practice in China. Firstly, we introduce and discuss the competency-based approach, including its

36   strengths and weaknesses and how this applies within the Chinese development system. Next, we

37   introduce and evaluate an alternative, expertise-based development system characterised by

38   adaptability and greater inclusiveness within the coaching domain, which is underpinned by a

39   distinct set of cognitive decision making skills from the coach's perspective. In addition, we expand

40   this discussion by explaining the implications of this approach for coach assessment and offer some

41   future suggestions for research in this area.

42   *Keywords:* decision-making, education, expertise, social milieu

43   **The nature of sports coach development in China: What are we trying to achieve?**

44   Globally, coach education and continuous professional development (CPD) have been a

45   significant focus of discussion and research as coaching becomes increasingly recognised as a

46   profession in its own right. Such discussion is truly worldwide (e.g., Callary & Gearity, 2019b),

47   including in the United States (Aoyama, 2003; Gilbert et al., 2009), New Zealand (Cassidy & Kidman,

48   2010), Canada (Edwards et al., 2020), the United Kingdom (Nelson et al., 2013) and China (Guan &

49   Zhang, 2008; Zhang, 2010). At the same time, research has identified that informal learning,

50   including self-directed learning experiences (Wright et al., 2007; Reade et al., 2008), past sporting

51   experiences (Stewart & Sweet, 1992; Cushion et al., 2003; He et al., 2018) and interactions with

52   other coaches (Abraham et al., 2006; Cassidy & Rossi, 2006) can all play a valuable role in coaches'

53   development and career advancement. However, the impact and role of formal learning cannot be

54   ignored, despite some evidence reporting its lack of impact for coaches' learning (Nelson et al.,

55   2013; Piggott, 2015). Indeed, we argue that achieving a coherent and complementary balance across

56   formal and informal activities is at the heart of effective coach development systems (see He et al.,

57   2018). Consequently, this article will address key outcomes and underpinning philosophy to ensure

58   improved effectiveness within the profession.

59   Taking China as the focus of this *Practical Advances* article, there is limited and only very

60   recent literature that shows a competency-based (teaching *what to do and how*) development

61   system to be characteristic of most formal coach education in mainstream sports (Chen & Chen,

62   2022). Specifically, there are two systems of coaching in China, one is the elite sports system and the

63   other is a school (mass sports) system, managed by the General Administration of Sports (GAS) and

64   the Ministry of Education (MoE), respectively. Both the GAS and MoE adopt a skill grading system as

65   a way of developing and promoting sports coaches' skills. Comparable with systems in other

66   countries, both have clearly defined the duties, qualifications, approval procedures and employment

67   methods for the different coaching levels, with the assessment organised by the appropriate level of

68   institution to evaluate theoretical knowledge and professional competence (Chen & Chen, 2022).

69   Where the system in China differs, however, is the requirement for coaches to improve their political

70   awareness, publish academic articles at an international level, as well as demonstrating elite success

71   with athletes, for the highest grade of accreditation. Moreover, proficiency in a foreign language has

72   become one of the essential requirements for coaches in the revised grading system (State Ministry

73   of Personnel & National Sport Commission, 1994). Notably, this foreign language requirement has

74   been identified as a barrier to coach development with regards to understanding and speaking

75   English (He et al., 2018). In summary, the coaching pathway in China can be viewed as very formulaic

76   in terms of criteria that need to be achieved, with a focus on high academic qualifications and

77   international coaching success as requirements for the highest-level of accreditation.

78   Despite the competency-based system in China producing many successful coaches of elite

79   athletes, the problems it has revealed are diverse. Firstly, the development of coaches under the

80   school sports system is restricted by the influence of the 'Juguo Tizhi' policy; that is, the whole

81   country should focus on supporting the development of elite sport and specific sports with a strong

82   national identity (e.g., table tennis and football). Secondly, according to the regulation governing

83   coaches' development, senior coaches must submit a special application to the GAS to advance to

84   national level under the school system (General Administration of Sport of China, 2003). However,

85   details of this special application process are vague and unclear, which presents a barrier for

86   qualified coaches to progress (Chen & Chen, 2022). Thirdly, as the role of school coaches is often

87   played by college and university physical education teachers (not full-time professional coaches),

88   their CPD training and skills assessment is often lacking and aligned to the narrow agenda of the

89   government's policy, which affects the professional competence of school and mass coaches (Li,

90   2006). Fourthly, even for elite coaches, Wu and Wang (2016) found that their education level and

91   research capacity (i.e., academic skills) was low because they mostly entered their position following

92   retirement as athletes, which limited their opportunity for further development under a

93   competency-based development system. Reflecting the current approach, CPD in China can be

94   viewed as placing a large emphasis on theory at the expense of applied practice and/or experience

95   (Wu et al., 2016). In this way, current coaching materials attach greater importance to traditional

96   disciplines (e.g., biomechanics and physiology) rather than the more holistic needs of coaches, such

97   as sports psychology, relationship management and motor skill development. Indeed, the idea of

98   interdisciplinarity, which is a prominent feature of participant development in the UK coaching

99   system (e.g., Bailey et al., 2010), is not strongly featured within the Chinese coach education agenda.

100   For instance, understanding how to use an interdisciplinary approach might include the effective

101   presentation of technical information to an athlete during the process of making small refinements

102   to their movement (Carson & Collins, 2017). Accordingly, a coach may offer video feedback and

103   consider the nature of verbal communication with the athlete to reflect the psychological challenge

104   involved when trying to interpret the information (e.g., being encouraging, guiding and sympathetic

105   to any confusion/misunderstanding/frustration/worry). In addition, the coach may utilise social

106   factors by providing an example of another athlete who is held in high regard, with similar body

107   dimensions and who can demonstrate the effective technique and/or demonstrated desirable

108   psycho-social skills (e.g., being open with their support team, having realistic goals throughout a

109   competitive season etc.) necessary to complete the intervention previously. Furthermore, the

110   interactive nature of these disciplines in applied practice, in addition to the decision making to

111   design and apply an optimum 'blend' for the context, are both lacking. As a result, the current

112   competency-based development system in China warrants critical evaluation.

113   Given the issue discussed above, research should begin to address many aspects of the

114   Chinese sports development and education system, including its aims and practices. In contrast to

115   competency-based (teaching *what to do and how to do it*) development systems, the current

116   coaching development literature proposes that a more appropriate expertise-based (teaching *what*

117   *to do, how* and understanding *why*) approach is more appropriate to meet the needs of different

118   sport participants (Collins et al., 2015b). Accordingly, in an attempt to accelerate the development of

119   coach education in China, the purpose of this paper is to present our insights as coach developers on

120   this important, yet relatively unaddressed (see Callary & Gearity, 2019b), topic. Specifically, we will

121   comment on the literature exploring how coach education has been developed and assessed, the

122   most current approach and its implications for coaching practice in the context of our current

123   scientific knowledge regarding systems in China.

124   **What are we Developing and Assessing within Coach Education?**

125   **Competency-based Development Systems**

126   Within coach development programmes, presentation of what the coaching process consists

127   of has profound implications for how a coach conceptualises their work and for how the sports

128   industry understands high-level coaching. In this regard, a competency-based development system is

129   common in coach education that provides prescriptive actions for coaches within teaching materials

130   and syllabi, specifies training time and 'competency units'. In short, teach *this*, in *this* way.

131   Importantly, competencies are taught as a set of behaviours that a coach must be able to

132   demonstrate, such as a sporting technique (e.g., how to correctly execute an overhead serve in

133   badminton), the design of training sessions (e.g., warm up, explanation and demonstration of skill,

134   practice drills etc.) and management of risks (e.g., location of participants at a safe distance when

135   learning a racquet sport; Chinese Basketball Association, 2022; Chinese Badminton Association,

136   2021; Wang et al., 2021). Following a period of practice using these competencies, coaches are

137   assessed in an environment where these same behaviours are observed and evaluated by specialist

138   examiners. Although the accreditation content varies from country to country, the model or

139   framework for training and assessment described above is very similar and this development

140   pathway is considered central to the coaching support role (Trudel & Gilbert, 2006).

141   While there is recognised merit in coaches being competent in their delivery of content and

142   some situations requiring a black and white 'if this, then . . .' approach, many have critically argued

143   that, in real-world practice, the challenges faced by coaches are often characterised by complexity,

144   interdisciplinarity and uniqueness (Abraham & Collins, 2011; Collins et al., 2015a). In other words,

145   rather than coaching solutions being right or wrong or black and white, they are often differentially

146   effective based on a large range of factors (e.g., the amount of time afforded, athlete personality,

147 injury status, etc.) which present a more nuanced 'shades of grey' understanding. In fact, even if

148 these differences are subtle, they are often meaningful towards the level of impact on participant

149 development and performance. That is, coaching behaviour is not a programmed formula that has

150 standard answers, but rather the result of considering myriad of influencing contextual variables

151 within a very specific situation (Jones, 1997). These factors include the type and demands of the

152 sport (e.g., Harvey et al., 2013), the age of the athlete (e.g., Partington et al., 2014), the gender of

153 the athlete (e.g., Millard, 1996), the skill level of the athlete (e.g. Markland & Martinek, 1988), the

154 philosophy of the coach (Cushion & Jones, 2001) and the stage of the season (e.g., Potrac et al.,

155 2002), to name only a small number; thus, testing the depth and breadth of the coach's knowledge

156 and their cognitive decision making ability. Effective coaching is therefore considered to require both

157 a broad and deep level of relevant subject knowledge pertaining to sporting, situational and

158 contextual variables (e.g., sport-specific, pedagogy and life skills), combined with a mastery of

159 practical approaches (e.g., prioritisation, video analysis and periodic performance reviews) to plan,

160 implement, progress and review participants' pathways (see Abraham et al., 2006). Considering

161 effective coaching with these factors in mind carries with it a significant cognitive load.

162 Consequently, there is a need to develop specialist, interdisciplinary knowledge to address

163 challenges in the professional environment, rather than relying on overly-simplistic, repetitive and

164 recipe-like solutions that might not address the complicated and most important of situationally-

165 dependent issues (Hoffman et al., 2012); in short, this need cannot be met solely by the

166 competency-based development system. Crucially for coach developers, the current mainstream

167 development pathway should, at the very least, be critically considered if it is to consistently

168 produce effective practitioners (Collins et al., 2015a).

169   Empirically, evidence has supported both the beneficial and limiting role of the competency-

170 based approach. Banack et al. (2012) found that novice cross-country skiing coaches were able to

171 effectively acquire an understanding of prescriptive concepts within talent development and employ

172 them within their coaching practice in a short time period. Demers et al. (2006) also demonstrated

173 the utility of a competency-based approach to training undergraduate university students in Canada,

174 achieved through both knowledge acquisition and practical participation within specific

175 environments. Key competencies within the programme were; making ethical decisions, practicing

176 safely, analysing performance and providing prescriptive solutions, delivering training sessions,

177 supporting athletes at competition, designing a season or 1 year programme according to defined

178 guidelines and undertaking administrative duties. Self- and peer-to-peer reflections were used in a

179 guided manner in relation to what was coached and how. However, it is acknowledged that these

180 need to be less structured in later stages and there is a growing need for coach independence. This

181 initial approach does seem to facilitate coaches to solve situational issues and offers a transition

182 from classroom learning to on-site practice by internships. Despite this competency-based approach

183 emphasising the importance of communication, it does not provide relevant training and evaluation.

184 Mason et al. (2020) also demonstrated that interaction in competency-based approaches is often

185 limited. In summary, there is need to further explore the effectiveness of this approach.

186   Indeed, the problems with the competency-based development system are varied and

187 cannot be ignored. Firstly, as discussed above, this development pathway does not suit the existing

188 professional environment or range of clients experienced by most coaches (e.g., in sport and/or

189 school settings). For instance, effective coaching relies on interpersonal circumstances in which one

190 interacts with clients/athletes/students/other colleagues. There is no doubt that the inability to

191 communicate effectively and build good relationships with participants is not conducive to improved

192 performer or team performance (Margaret et al., 2010). However, the competency-based approach

193 does not appear to provide effective training for, or evaluation of, interpersonal related issues such

194 as ethics, emotions and social skills, or at least not for the range of possible permutations within the

195 coaching environment (Carson et al., 2021). For example, in the case of basketball, football and

196 badminton coach education in China, the developmental focus is solely on theoretical knowledge

197 and practical demonstrations. In doing so, the training disregards the importance of the

198 interpersonal dimension and/or needs of each athlete (cf. Chinese Basketball Association, 2022;

199   Chinese Badminton Association, 2021; Wang et al., 2021). Furthermore, even if a coach

200   demonstrates competence when being assessed, there is no guarantee that s/he will be able to

201   properly utilise or adapt it in practice when required to meet any change in demands. In other

202   words, acquiring a competency does not equate to making an individual competent in *transferring*

203   the knowledge and/or behaviour within the sports coaching context (Mintzberg, 2004). Conversely,

204   it is not possible to say that a person is incompetent in a role because they omit the demonstration

205   of a skill during assessment.

206   In addition, the competency-based development approach provides what appears to be a

207   comprehensive but overly simplistic certification for sports coaches. In China, the qualification to

208   become a Level E coach (i.e., who can only assist other coaches) in basketball, football or badminton,

209   requires training and assessment of 10–23 theoretical and practical competency units within 40

210   educational hours (Chinese Basketball Association, 2022; Chinese Badminton Association, 2021;

211   Wang et al., 2021). Similarly, UK Coaching (2022, 2023) stipulates that a qualified UK Level 1

212   basketball or badminton coach requires the development and assessment of approximately three

213   competency units and the fulfilment of four sets of learning standards over 40 educational hours. In

214   contrast, becoming a UK doctor requires the achievement of 16 outcomes in 5,500 training hours

215   (General Medical Council, 2011). We therefore consider it dubious and epistemologically

216   inconsistent to train sports coaches to become proficient in such a wide range of competencies in a

217   limited timeframe.

218   Furthermore, the coaching materials used for training in this framework are likely out of

219   date (e.g., Fitts & Posner, 1967). In fact, the rate at which new research findings are translated and

220   compiled into valuable material is slow within applied settings (Farrow et al., 2008). It is suggested to

221   take at least 10–20 years to apply coaching theory to practice (Rushall, 2003). Finally, even though

222   the competency-based approach is able to develop success in sport, it does not satisfy the practical

223   and global demands associated with different settings (e.g., cultural, regional and types of sports).

224   That is to say, with increased globalisation of the sports industry, working with cross-cultural teams

225   and athletes, or in an unfamiliar social environment, has become a common challenge (Griggs &

226   Gibbons, 2014). Such challenge is truly diverse and significant, including important factors relating to

227   the coach–athlete relationship (Yang & Jowett, 2013), pedagogic approach (e.g., using physical

228   punishment; Hagiwara & Wolfson, 2013), culture (collectivist culture vs. individualist culture; Yang &

229   Jowett, 2013) and management style (Wang & Calloway, 2011). Accordingly, the competency-based

230   approach lacks consideration of these important and nuanced challenges to the delivery of training

231   practices. Therefore, coaches progressing through such a system may struggle to transition when

232   working in other contexts around the world or with different participants.

233   Despite this criticism, competency-based development can be beneficial for novice coaches

234   without practical experience. Specifically, it contributes remarkably to the early development of a

235   coach's career, for example, by systematically developing theoretical knowledge, providing guidance

236   on technical actions and managing and responding to simple risks. Indeed, the initial experience and

237   knowledge base of most coaches is often gained through 'apprenticeships of observation' as an

238   athlete (e.g., Cassidy & Rossi, 2006; Harvey et al., 2013). Although, learning from expert practitioners

239   is limited unless consideration is given to *why* coaches take the actions they do (Martindale &

240   Collins, 2010). Thus, competency-based systems provide a valuable keystone for coach development

241   in the first instance to better understand what principles might look like. However, while the

242   foundational activities in practice, including safety checks and planning of sessions, are aligned with

243   the standards trained in the competency-based framework, when the challenges encountered are

244   more esoteric and difficult, the system does not meet the needs of the practitioner and it is

245   impossible to cover all possible solutions within coach education training. As discussed above in

246   relation to the variety of contextual variables, the issues faced by practitioners in complex situations

247   are often dynamic, uncertain and unpredictable. Coaches need to work towards integrating and

248   applying interdisciplinary knowledge to achieve different training objectives to meet the diverse

249   needs of their clients and, most crucially, understand why they are doing what they are doing

250   (Olsson et al., 2017). For example, for athletes who are recovering from a serious illness and want to

251   rebuild their athletic ability and confidence, coaches often need to integrate psychological and

252   communication skills to fulfil athletes' demands, rather than just designing physical sessions and

253   demonstrating movements that take into account injury history. Another example when coaching

254   young participants and/or beginners is the delivery of instructions when learning a motor skill. In this

255   instance, making the verbal instructions personally and culturally more meaningful and functionally-

256   relevant should be reflected in the content, modality and volume of instructions provided

257   (Bobrownicki et al., 2019). However, these common challenges in practice cannot be fully addressed

258   by a competency-based development system. Therefore, this framework no longer seems practical

259   for those coaches wanting further development because by its very nature it separates and isolates

260   specific procedural tasks from the complex entirety of the coaching role (see Olsson et al., 2017).

261   **Expertise-based Development Systems**

262   In contrast, expertise-based approaches address the limitations of the competency-based

263   system described above. Before proceeding to a more in-depth discussion, it is beneficial to clarify

264   exactly what we mean by expertise for better understanding. Collins et al. (2016) utilises the work of

265   Hoffman (1998) to define expertise as:

266   (a) cognitive development (progression from superficial and literal understanding to articulated,

267   conceptual and principled understanding); (b) knowledge structure (more sophisticated

268   knowledge organisation, and more elaborate mental models); and (c) reasoning processes

269   (enhanced perceptual skill, more case-based reasoning and greater reasoning flexibility). (p. 3)

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271   In fact, this is similar to the general definition of expertise (not sport or practitioner-specific) in the

272   Chinese context: (a) solid meta-competence; (b) systematic knowledge and; (c) the ability to solve

273   practical problems (Zhiliao Haoxue, 2021). In addition, in Chinese, expertise is also considered to

274   have the capacity for continuous career progression based on personal growth (Zhiliao Haoxue,

275   2021). In summary, expertise acknowledges the necessity for thinking skills, a propensity to

276   understand differences, self- and situational awareness in the face of different performer and/or

277   sporting demands and an ability to justify *why* coaching actions are taken and others are not. In

278   doing so, the expertise-based development system advocates *active* development of flexible and

279   adaptable cognitive factors (e.g., meta-competence) as an extension to the behaviours and

280   systematic knowledge on which the competency-based system focuses. Unfortunately, as explored

281   earlier when addressing the Chinese coach development system in sport, crucial consideration of

282   these characteristics seems to be missing when evaluating high-level coaching practice.

283   Specifically, expertise-based solutions assume that the options available to coaches when

284   attempting to solve a particular practical problem are diverse and that the best strategy usually

285   requires a combination of approaches that are adapted for each individual (Girot, 2000). Indeed, an

286   expertise-based approach can be more difficult for coaches since it comes with additional

287   procedures to ensure that an effective solution is being provided as a situation develops. As such,

288   coaches must be able to monitor their actions, their impact and the potentially changing demands of

289   the situation/performer needs. This means that, following an initial analysis, coaches must decide on

290   a most appropriate solution, track and understand the nature of a performer's progress and audit

291   their decisions in context. Based on this perspective, a focus on the cognitive factors (i.e. *why*),

292   including learning reflective, reasoning and adaptive skills (Knowles et al., 2013), becomes the focus

293   of the abilities that coaches need to develop, which is also the focus of the expertise-based

294   framework. This is clearly more in line with the needs and circumstances of practitioners working

295   with different participants than the competency-based approach's emphasis on the behavioural

296   factors alone (i.e., *what* to do and *how* to do it). With these skills comes an ability to professionally

297   develop, by working to support performers on more complex problems (e.g., assessing poor

298   performance causes across multiple factors such as fitness, imagery ability and lifestyle) and over

299   longer timescales that require higher-levels of planning and knowledge (e.g., 4 year Olympic cycles).

300   In this regard, decision-making has been recognised as key to many professions (Smith et al.,

301   2004). Therefore, understanding and improving decision-making skills is an example of what an

302   expertise-based system should embed to effectively develop coaching skills (Collins et al., 2015a).

303   Specifically, scenario-based training and formative testing of professionals' expertise (e.g.,

304   awareness and rationalisation of situational demands) are central to this development pathway. Its

305   contribution to practitioners is diverse, including facilitating the learning of complex and

306   interdisciplinary knowledge structures, building a more complete mental model of practice,

307   providing a model of 'cognitive apprenticeship' to enable their thinking to be seen by peers and

308   themselves and developing 'cognitive authenticity' (Ross & Pierce, 2000). It is worth emphasising

309   that, unlike a competency-based system, the review of key sporting, situational and contextual

310   factors (e.g., athlete attitude, family involvement, physical attributes, time afforded, level of

311   competition, etc.) will be *prioritised* in this approach based on their weighted level of impact. Only

312   those factors that are most important in influencing the identified issues will be considered for

313   review and evaluated by the coach.

314   **Assessment within Coach Development**

315   Discussing the different assessment process of the competency versus expertise approach

316   facilitates a deeper understanding of the characteristics of, and values within, both systems. In the

317   former approach, the assessor will systematically observe the coaching process and evaluate the

318   performance of the coach against established criteria. Examples within Chinese basketball coach

319   assessment include "successful demonstration of skills for training objectives", "reasonable planning

320   of session procedures" and "accurate and correct use of teaching language and terminology"

321   (Chinese Basketball Association, 2022, para. 3 and 4). Although systematic observation is considered

322   a valuable tool and one of the most commonly used methods to understand coaching behaviour

323   (Gilbert & Trudel, 2004), its limitations cannot be ignored (see Kahan, 1999) since it only attaches

324   importance to behavioural factors and not an understanding of an authentic coaching context.

325   Indeed, it is possible that a coach might simply copy the behaviours of another coach, or learn to the

326   criteria of the assessment which might not be suitable when presented with a slightly different

327   problem needing to be solved. In this regard, existing research has focused on mixed methods

328   approaches by combining systematic observation and interpretive interviewing (Cope et al., 2017;

329   Hall et al., 2016). That is, not only are coaching behaviours considered, but also coaches' rationale,

330   such as why a behaviour was chosen and used, whether alternatives were considered and the

331   reasons for not choosing alternatives are explored (Collins & Collins, 2014). This idea of valuing both

332   the process and meta-processes of the behaviours associated with the key sporting, situational and

333   contextual factors is precisely the systematic approach to assessment that is central to expertise.

334   Therefore, given the limitations of the competency-based approach discussed above, we

335   deem that it is not sufficient to assess *only* 'what coaches do'. Instead, the expertise-based approach

336   is more appropriate for developing coaches because it focuses additionally on the 'why they do'

337   (and, of course, why not) that helps to develop practitioners' aforementioned frameworks of

338   thinking, reflective and analytical skills to meet the demands of their dynamic, changing and

339   interdisciplinary professions. The next section discusses the practice and impact of this approach in

340   coach development in more detail.

341   **Implications of an Expertise Approach on Coach Development**

342   Some national institutions have realised that understanding and developing coaching should

343   meet the demands of learners in each particular context (e.g., UK Coaching, 2018). Considering that

344   expert coaching places high cognitive demand on decision-making processes, training and

345   developing decision-making skills helps coaches to fulfil their career ambitions of having an impact

346   with a range of participants. In order to improve this capacity, Collins et al. (2016) suggested that its

347   development requires much thought in the form of metacognition, or in short, thinking about

348   thinking through planning, monitoring and reflecting on a coach's behalf. Given this background,

349   Abraham and Collins (2011) explored and created an integrated approach for professional

350   judgement and decision making (PJDM), of which metacognition is considered a fundamental to this

351   process (Collins et al., 2016). Within the PJDM approach, coaches must decide on and undertake an

352   on-going audit of their strategy to meet specific participant needs in relation to situational demands

353   and the coaching context. Indeed, such a process requires coaches to possess both depth and

354   breadth of knowledge and procedural skills when formulating their intention for impact (Martindale

355   & Collins, 2005).

356   Reflecting PJDM in practice, applications regarding this approach are currently focused

357   across a range of practical contexts, including adventure sports that are characterised by diverse

358   participation motivations and demands (e.g., Collins & Collins, 2016) and within the strength and

359   conditioning domain to realise the contribution of multiple disciplines that contribute toward

360   effective athlete engagement (Downes & Collins, 2021). Specifically from our first example, Collins et

361   al. (2015b) examined the role of adaptability and creativity in PJDM and found that adventure sports

362   coaches were particularly good at recognising and managing the interdependencies of context,

363   content and individual demands. Similarly, Downes and Collins (2021) exemplified the professional

364   practise of strength and conditioning coaches by suggesting and revealing the decision-making

365   processes and emphasising the necessity of communication, confidence and flexibility for successful

366   coaching. It is therefore not surprising that PJDM plays a significant role in developing effective

367   outcomes (Collins et al., 2018).

368   Considering the importance of PJDM and how it may best be developed, Collins and Collins

369   (2021) proposed the 'Big 5' in conjunction with general expertise approaches (Cruickshank & Collins,

370   2015) to stimulate active cognitive development. Specifically, the 'Big 5' is designed as a series of

371   progressive considerations to reflect on the performance of coaching processes and outcomes

372   experienced. Firstly, coaches are prompted to focus on what happened or what the coach did during

373   the coaching process. Secondly, they are asked to consider the other options that may have been

374   available to them at the time, in order to establish a clear understanding of the events that took

375   place in the session. Thirdly, coaches should then provide the reason(s) for choosing a decision.

376   Fourthly, the Big 5 challenges coaches to consider what would need to have been different about

377   the situation/performer/etc. in order to select a different option. Finally, coaches are asked to

378   simulate their actions and behaviours in a hypothetical scenario and explore possible contingencies.

379   This structured approach gives the coach opportunities to share ideas with colleagues, to reflect

380   critically on their coaching and to maintain cognitive honesty by thinking through alternative

381   scenarios.

382   The Big 5, as an expertise-based approach, is a combination of PJDM-based and other

383   theories in coaching development. In fact, this approach requires coaches to frequently share ideas

384   and statements with colleagues; that is, to develop coaching through social interaction (cf.

385   Stoszkowski & Collins, 2014). Through this process, coaches discuss with each other and share

386   knowledge in pursuit of progress, which is a key factor to informing a community of practice (Lave &

387   Wenger, 1996) or a learning community (cf. Gilbert et al., 2009). This interaction also helps to

388   generate shared mental models (Cannon-Bowers et al., 1993) to anticipate and cater for the actions

389   of others to manage risk (Mees et al., 2020) or to adapt training practices for motor outcomes with

390   advanced performers (e.g., Carson & Collins, 2017), for example. Finally, this structured social

391   interaction follows the cognitive apprenticeship model (e.g., Cassidy & Rossi, 2006) and other expert

392   support roles (e.g., Martindale & Collins, 2010). In summary, a number of ideas in coaching

393   development provide a significant theoretical basis for the Big 5 approach.

394   Reflecting it in practice, the feedback from 50 experienced adventure sport coaches showed

395   that the Big 5 intervention is positive and able to meet their coaching needs (Collins & Collins, 2021).

396   Furthermore, this approach is recommended to improve the coaching of outdoor instructors (Mees

397   et al., 2021) and football coaches (Price et al., 2023). Considering the obvious importance of the

398   expertise approach in coach education, however, the amount of research attempting to address the

399   application of this advanced developmental system in the Chinese context is notably absent. In fact,

400   changing to this system may benefit coaches in China by clarifying the use and conceptualisation of

401   specific knowledge, but more importantly, assist in the development of key inter-personal and

402   communication skills (i.e., engaging openly with the Big 5 in peer-based learning context) that do not

403   exist in current coach development systems (i.e., Chinese Basketball Association, 2022). However,

404   residential training approaches are the most common method for training coaches in China and are

405   already criticised by researchers in China due to its inaccessibility with modern life and work

406   demands (Ma et al., 2004; He, 2019). This approach might therefore be challenging since adaptive

407   expertise takes longer to develop, if it is possible at all.

408   In summary, there is a broad recognised need for more research on the process of coach

409   development from the coach developers' perspectives, including their applied lived experiences

410   (e.g., Callary & Gearity, 2019a), learning by E-Portfolios (Dray & Howells, 2019) and workplace

411   learning (Leeder et al., 2019) when delivering coach development programmes. Therefore, we

412   encourage this direction of research in general and by focusing on the Big 5 application and impact

413   specifically, for diverse sport needs and with different cultural backgrounds such as in China.

Conclusion

415   After discussing both competency-based and expertise-based development systems, this

416   article has demonstrated the significant and important contribution the latter could provide to

417   coaches in China to improve their coaching skills. To be clear, this does not mean that the

418   competency-based approach is not helpful to practitioners. For example, it can be used to a greater

419   extent during early stages to develop theoretical knowledge and necessary practical competencies.

420   However, when considering more advanced coaching situations and how a coach education system

421   might best prepare early career coaches to progress to these stages, the limitations of a

422   competency-based approach becomes apparent. Notably, this article has highlighted the need for

423   greater nuance within the professional coaching environment, which has implications for coach

424   training content and assessment demands. Therefore, an expertise-based approach that focuses not

425   only on *what* and *how* coaches work, but also on decision making factors to understand *why* those

426   actions (and *why not* others) were taken, is suggestively more appropriate in meeting the dynamic

427   and complex professional environment faced by coaches.

428   In practical terms, the need for an expertise-based approach to coach development is

429   growing increasingly more important with the globalisation of the sports industry. Indeed, this is

430   reflected, for example, by the transfer of athletes/players across professional sporting leagues (e.g.,

431   in football) from many European countries to China (e.g., Paulinho from Tottenham Hotspur FC to

432   Guangzhou Evergrande and Oscar from Chelsea FC to Shanghai Port FC). Furthermore, coaches are

433   also moving to and from China to take up professional coaching opportunities at academies, national

434   organisations and with teams around the world (e.g., PGA, 2020; Tao et al., 2019). Domestically

435   within China, an expertise-based approach may also enable greater participation in sport, for

436   example by broadening the sports available or the nature of participation within those sports (Collins

437   & Carson, 2022). Accordingly, there is an increased need and benefit that can accrue from offering

438   an approach that embraces, is inclusive of and tailors for different peoples' needs. There are

439   undoubtedly differences between cultures around the world, but recognising and learning how to

440   negotiate these differences and adapt practice to improve a range of outcomes (e.g., performance,

441   competitiveness, enjoyment or health) is essential within the global context. In order to accelerate

442   progress in China toward this approach, future research should address some of the limitations

443   presented in this article due to its somewhat speculative nature due to an absence of research, by

444   assessing existing coaching practice and coaches' understanding through observation and interview

445   methods. Finally, we recognise that the social environment also plays a part in any implementation

446   of new coach education approaches and research should sensibly consider important factors within

447   this domain in China.

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