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Beyond Knowledge Transfer: The Role of Coach Developers as Motivators for Lifelong Learning

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14   **Abstract**

15   Research investigating coach education and development has grown significantly over the past three

16   decades. Most of these efforts have focused on establishing how coaches learn; yet the actual impact

17   of specific coach education and development interventions has received considerably less attention.

18   Moreover, the role of coach developers in facilitating this impact remains largely unknown. To

19   address this knowledge gap, this study used a realist evaluation approach to engage in a detailed

20   exploration of a large-scale, multi-annual coach education and development intervention with high

21   school coaches in the Philippines. Using interviews and focus groups at two different time points

22   with multiple stakeholders, this study established a series of context, mechanism and outcome

23   configurations that provide a nuanced perspective on how coach education and development works.

24   More specifically, this paper offers a novel interpretation of the role of coach developers as

25   'motivators for lifelong learning' established through three key mechanisms: 1) being available,

26   approachable, and supportive; 2) creating a sense of belonging; and 3) raising coaches' aspirations by

27   increasing their sense of purpose and duty. Practical guidelines for the education of coach developers,

28   as well as future coach education and development programmes are provided.

29   **Keywords:** Coach Education; Coach Development; Realist Evaluation; Critical Realism; Learning

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31   Beyond Knowledge Transfer: The Role of Coach Developers as Motivators for lifelong Learning

32   Sport participation is a central contributor to individuals' physical and mental well-being.

33 Approximately 1.1 million coaches provide sporting opportunities to millions of children,

34 adolescents, and adults on a daily basis in the United Kingdom alone (North, 2009). Coaching is thus

35 a fundamental pillar of the sport delivery system that can positively affect societies and individuals

36 alike (European Commission, 2017). Consequently, efforts have been made to professionalise and

37 ensure high quality coaching across all levels of sport participation over the past 25 years, by

38 increasing the amount of research conducted within coach education and development (CED)

39 contexts (McQuade & Nash, 2015).

40   Much of this research has focussed on how coaches learn, providing detailed insight into the

41 sources and ways of learning coaches value throughout their development (Deek, Werthner, Paquette,

42 & Culver, 2013). Nevertheless, literature exploring the impact of CED opportunities as part of

43 coaches' learning remains scarce (Langan, Blake, & Lonsdale, 2013), resulting in the majority of

44 CED programmes lacking robust examination and being only partially informed by research-

45 generated evidence. As a result, an increase in the scrutiny of CED has been called for in the

46 literature (Douge & Hastie, 1993; Gilbert & Trudel, 1999; Trudel, Gilbert, & Werthner, 2010) and at

47 a policy level (European Commission, 2017; ICCE, ASOIF, & LBU, 2013; Lara-Bercial et al., 2017).

48   Despite efforts to encourage an increase of research evaluating CED programmes (Gilbert &

49 Trudel, 1999), a review of the literature revealed that only 14 empirical studies published between

50 1998 and 2007 attempted to evaluate the effectiveness of CED programmes (Trudel et al., 2010). An

51 additional 25 papers evaluating the effectiveness of CED programmes published between 2008 and

52 2019 were identified as part of the literature reviewed for this study (Table 1). Reviewing all 39

53 papers is beyond the scope of this article; nevertheless, key inferences can be drawn.

54   First, the majority of studies focused on evaluating the impact of small-scale CED programmes

55   that were of a short-term nature and educated coaches on specific topics, such as injury prevention or

56   nutrition (Belski et al., 2018; Gianotti, Hume, & Tunstall, 2010). While valuable and informative, the

57   relevance of these findings to federations or higher education CED programmes is unclear, as these

58   commonly constitute of much wider curriculums and longer interactions between coaches and coach

59   educators (CDs).

60   Second, a broad array of data collection methods have been employed to evaluate CED

61   programmes, including (1) experimental or quasi-experimental designs that collected pre- and post-

62   intervention data mostly through questionnaires (Bowley, Cropley, Neil, Hanton, & Mitchell, 2018);

63   (2) inductive qualitative designs that recorded coaches' experiences through semi-structured

64   interviews (Driska & Gould, 2014); (3) mixed method designs that conducted pre- and post-

65   intervention questionnaires, semi-structured interviews, and, in some cases, field observations (Deek

66   et al., 2013); and (4) case-study designs that focused on CDs' reflections of the programme (Van

67   Hoye et al., 2015). The choice of methodology appeared to affect the type of findings elicited from

68   each study. Specifically, quantitative studies tended to evaluate whether or not change had taken

69   place, yet provided limited insight into the mechanisms that triggered this change. Qualitative studies

70   commonly described the lived experiences of CED programme participants, thus provided insight

71   into the internal functioning of the programmes. In comparison to quantitative and qualitative

72   approaches, mixed method designs appeared to offer the most rounded, nuanced, and multi-layered

73   picture of CED programmes by providing insight into programmes' effectiveness, as well as coaches'

74   experiences and the mechanisms that contributed to the success or failure of the programmes.

75   Finally, differing variables have been evaluated to judge the impact of CED programmes,

76   including for example coaches' satisfaction with the content and delivery of programmes. Although

77   collectively these results provide insight into the various mechanisms that contribute to the

78   effectiveness of CED programmes, none of the reviewed studies explored the effects of CDs'

79   personal characteristics on coaches' learning. Yet, various publications, including the International

80   and European Sport Coaching Frameworks (ICCE et al., 2013; Lara-Bercial et al., 2017) and the

81   International Coach Developer Framework (ICCE, ASOIF, & LBU, 2012), highlight the significant

82   impact CDs' personal characteristics can have on CED.

83   Indeed, CDs' behaviours, knowledge, and practices have been found to leave lasting impressions

84   that can affect coaches' motivation towards lifelong learning in adaptive or maladaptive manners

85   (Deek et al., 2013; Nelson, Cushion, & Potrac, 2011). CDs have been defined as "those trained to

86   develop, support and challenge coaches to go on honing and improving their knowledge and skills in

87   order to provide positive and effective sport experiences for all participants" (ICCE, ASOIF, & LBU,

88   2012, p.6). This definition, as well as existing empirical research, emphasizes that CDs are not only

89   subject matter experts who transfer knowledge, but individuals who hold an array of different roles,

90   including roles as leaders, facilitators, mentors, assessors, and course designers (Abraham et al.,

91   2013; North, 2010; McQuade & Nash, 2015).

92   These multiple roles require CDs to be highly self-reflective and understanding of (1) the context

93   in which education takes place; (2) the coaches whom they are working with; (3) child, adolescent,

94   and adult learning theories; (4) coaching curricula; and (5) innovative educational practices

95   (Abraham et al., 2013). Despite the complex and important nature of the many roles played by CDs,

96   research investigating this topic is in its infancy. Considering the importance of CDs in the

97   development and implementation of CED programmes that inspire coaches to meet the ever growing

98   demands placed upon them through a commitment to lifelong learning, a greater understanding of

99   effective CDs needs to be developed.

100   In summary, the substantial increase in the attention paid to the education and development of

101   coaches has played a fundamental role in enhancing the development and delivery of CED

102   programmes worldwide. Nevertheless, more research is warranted that evaluates the mechanisms that

103   foster the success or failure of large-scale CED programmes. More specifically, research focusing on

104   the characteristics that constitute effective CDs is necessary. Consequently, the present study

105   focusses on the findings referring to the characteristics of effective CDs that were elicited as part of a

106   large-scale evaluation of a tailored CED programme for high school coaches in the Philippines.

Theoretical Framework

108   The study was underpinned by a Realist Evaluation (RE) approach (Pawson & Tilley, 1997;

109   Pawson, 2013). RE is informed by critical realism (Bahskar, 1998) and strives to look inside the

110   black box of social interventions, to understand not only if a programme works, but more

111   importantly, how it works and why. RE operationalises this approach by prioritising the mechanistic

112   explanation of phenomena using research designs that extract, test, and refine programme theories

113   (Pawson, 2013). Programme theories comprise of context-mechanism-outcome (CMO)

114   configurations that allow researchers to make explicit the objectives of a programme within a specific

115   context(s), as well as the underlying assumptions about how the programme works (i.e.,

116   mechanisms). By making CMO configurations explicit, the process of programme design and

117   evaluation becomes more robust, reliable and fruitful. Programme theories also signal areas that

118   require investigation, ensuring the researcher is "looking in the right place" (Pawson & Tilly, 1997,

119   p. 72).

120   A key tenet of the RE approach is that interventions do not work the same way across all

121   contexts, therefore CMO configurations vary depending on circumstances, time, as well as the

122   response of individuals and broader influences (Pawson, 2013). As a result, researchers commonly

123   aim to gain general, as well as individualized insights into 'what worked for whom, in which

124   circumstances, and why?' (Pawson, 2013, p.29). Describing the concurrent, sequential or even mixed

125   influences that generate outcomes in specific contexts and for specific individuals is challenging. In

126   order to do this, a variety of research methods must be used to identify and explore how outcomes,

127   context and mechanisms come together to produce CMO networks (Lara-Bercial, 2018). The

128   following section describes the methodology employed in this study to operationalise RE in the

129   context of CED.

Methods

Participants

132   Two Philippine National High Schools for Sport were part of this longitudinal study. In total,

133   28 high school coaches[1] (9 females and 19 males), ranging in age from 22-56 (M_{age} = 38.75; SD =

134   8.36) and two male school coach coordinators, aged 47 and 42, participated in this study. Coaches'

135   coaching experience ranged from 1-16 years (M_{years} = 8; SD = 4.56) in sports such as archery, arnis[2],

136   athletics, badminton, baseball, basketball, chess, football, gymnastics, tennis, sepak takraw[3], softball,

137   swimming, and volleyball. All participants identified as 'Filipino'.

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[1] In the context of this paper, high school coaches are defined as individuals who function as school teachers and coaches. To hold this dual responsibility, high school coaches are expected to have a bachelor's degree in physical education and track record of athletic/sport participation. In reality, however, the vast amount of coaches included in this study held non-sport related degrees and did not possess an accredited coaching qualification.

[2] Arnis, a form of martial art, is the national sport of the Philippines.

[3] Sepak takraw, a form of kick volleyball, is a sport native to Southeast Asia.

Procedure

The Department of Education of the Republic of the Philippines and Get Passionate Productions Corporation, supported by the British Council, commissioned Leeds Beckett University to develop an athlete centred CED programme for the forthcoming Philippine Academy for Sports, entitled Coach Advancement Programme (CAP). The programme was informed by a scoping study[4] that identified current and sought after programme theories to design, implement, and evaluate a CED programme that met the needs of coaches, athletes, and stakeholders. Ethical approval was obtained from Leeds Beckett University and all participants, or their respective guardians, provided informed consent.

The CED programme consisted of a six-day residential introductory course, a ten-month on-the-job practicum, and a five-day residential consolidation course (see Table 2 for full details). The programme aimed to enhance coaches' capacity to fulfil the six primary functions of the coach as defined by the International Sport Coaching Framework (ICCE, ASOIF, & LBU, 2013), including (1) setting vision and strategy, (2) building relationships, (3) setting the environment, (4) conducting practice and competition, (5) reflecting and learning, and (6) reading and reacting to the field.

The programme was delivered by eight CDs, including two females and six males (M_{age} = 41.57, SD = 13.74). Six CDs identified as 'Filipino', representing a cohort of local CDs. One CD identified as 'Spanish' and one as 'German', representing teaching and research staff from Leeds Beckett University. Together, the CDs espoused a constructivist view of learning which revolved around the principles of disjuncture (i.e., the gap between our current knowledge and skills and those

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[4] The scoping study was conducted over a six-month period, one year prior to the implementation of the CAP. A summary of the study is available upon request.

158   required to solve the current problem; Jarvis, 2006), cognitive dissonance (i.e., having one's personal

159   beliefs challenged by new knowledge; Jarvis 2006), and the processes of assimilation (i.e., the

160   processing of new material to foster learning; Moon, 2004) and accommodation (i.e., the changes in

161   cognitive structure that follows assimilation of new learning material; Moon, 2004).

162   **Data Collection**

163   To develop an in-depth understanding of coaches' experiences, outcomes, and mechanisms of

164   the CED programme, data was collected at two time points (TP1 & TP2) through a mixed method

165   approach, including individual interviews with coaches and coach-coordinators, coach focus groups,

166   athlete focus groups, and perceived competence self-rating questionnaires. Despite the breadth of

167   data collected, this section focusses solely on the methods that provided insight into what constituted

168   effective CDs. Consequently, only individual semi-structured interviews and coach focus groups will

169   be explained in more detail.

170   Data was first collected after the delivery of the introductory course through semi-structured

171   interviews and focus groups. The interviews and focus groups were conducted by the two UK-based

172   CD's, who identified as a Spanish male, and a German female. Although a limitation of this may

173   have included the potential for socially desirable responses, a key advantage of having the CD's as

174   interviewers and focus group facilitators included the level of rapport already established with

175   participants (Smith & McGannon, 2018). This led to more open conversations, and also enabled to

176   the CD's to probe and ask specific follow-up questions due to their expertise and knowledge of the

177   programme.

178   Coaches were purposefully sampled to represent the wide range of ages that existed across the

179   sample. Individual semi-structured interviews were conducted with five coaches (three males and two

180   females) ranging in age from 29 to 56 years ($M_{age}=38$; SD=9.81). Interviews lasted between 50 and

181   130 minutes and contained questions such as: What do you feel have been the benefits of taking part

182   in the CAP?; Can you explain what made learning happen for you?; What worked for you and what

183   did not and why? Similar questions were posed to both school coach coordinators who participated in

184   a joint semi-structured interview lasting 90 minutes. In addition, two focus groups were conducted

185   with six coaches (three males and three females) from each school ranging in age from 29 to 50 years

186   (M_{age}=39; SD=8.53). Similar questions as in the individual interviews were posed; yet, as the focus

187   groups allowed all individuals to express their opinions, debate that led to new learning was

188   stimulated (Sparkes & Smith, 2014). The two focus groups lasted 82 and 155 minutes.

189   The second round of data was collected 12 months later, at the end of the consolidation

190   course. Specifically, twelve individual semi-structured interviews were conducted with seven male

191   and five female coaches who had previously participated in the individual or focus group interviews

192   conducted after the introductory course. Interviews lasted between 34 and 72 minutes and contained

193   the same questions as the previous interviews. The coaches ranged in age from 29 to 56 years

194   (M_{age}=41.25; SD=8.23). Individual semi-structured interviews were also conducted with the two

195   male school coach coordinators (age 44 and 47) lasting 85 and 15 minutes.

196   **Data Analysis**

197   To allow for the synthesis and organization of the large data set, thematic analysis was used

198   (Braun & Clarke, 2013). The method was chosen as it offers rich descriptions of the collected data by

199   identifying, analysing, interpreting, and reporting common patterns and themes emerging from the

200   data (Sparkes & Smith, 2014). Following Braun and Clarke's (2013) thematic analysis guidelines, a

201   six-step data analysis process was adhered to, including (1) familiarization with the data, (2)

202   generating initial codes, (3) searching for and identifying themes, (4) reviewing themes, (5) defining

203   and naming themes, and (6) writing the report. More specifically, the interviews and focus groups

204   were transcribed verbatim. Afterwards, interviews were listened to and transcripts read until full

205   familiarisation with the data was established. The data was then organised into segments

206   encompassing the same or similar information. For each segment a code was assigned. Next, codes

207   were organised into themes and sub-themes in the computer software NVivo 10. Finally, the themes

208   were critically reviewed, defined, and named by the whole research team, as well as critical friends,

209   which enabled the team to continually reflect, defend and clarify the analysis and findings. More

210   information about this process can be found in the "Quality Standards" section below.

211   **Quality Standards**

212   Methods were implemented to ensure the rigor, authenticity, and trustworthiness of the data

213   collection and analysis process. First, to facilitate an in-depth familiarization with the researched

214   context, understand the aims of the CED programme that was to be developed, and establish

215   authentic and trusting relationships with stakeholders, the United Kingdom based CDs travelled to

216   the Philippines twice for five days prior to the development of the CAP (Smith & Sparkes, 2014).

217   Second, the immersive approach before and during the CED programme allowed for sustained

218   dialogue between CDs and all participants, allowing for 'member reflections' leading to additional

219   data being collected and other data discussed (Smith & McGannon, 2018). For example, the CD's

220   exchanged notes after each data collection session to highlight any gaps in the evaluation that needed

221   further exploration. Further conversations with the participants outside of the formal interview and

222   focus group settings also elicited information that was then incorporated into the analysis, as well as

223   enabling clarification on data collected.

224   Third, the research team was immersed in a vibrant and interdisciplinary research community

225   consisting of academics from various disciplines, which provided opportunities to engage in

226   discussions and reflections about the research process, potential biases, and research findings (Smith

227   & McGannon, 2018). Finally, the research team met at least once a month during the data analysis

228   process to critically discuss the progress and processes of the data analysis (Smith & McGannon,

229   2018).

230   **Results and Discussion**

231   The present study was part of a large-scale investigation conducted to design, implement, and

232   evaluate a tailored CED programme for coaches in two Philippine high schools. The combined

233   findings of the various data sources provided substantive evidence of the positive outcomes the

234   participation in the CED programme had for school coaches[5]. In particular, coaches reported having

235   developed a holistic vision of athletes' development that was now fostered throughout both schools.

236   Furthermore, they felt capable of planning research informed coaching sessions; establishing and

237   maintaining positive relationships with their athletes and colleagues; providing game-based,

238   differentiated and individualized training sessions; and conveying a democratic rather than

239   authoritarian leadership style.

240   Nevertheless, from a realist evaluation perspective, it is not enough to determine the impact of

241   an intervention (i.e., outcomes); instead, it is important to identify what generative mechanisms

242   brought the outcomes about (Pawson, 2013). The current study identified a plethora of mechanisms

243   that played a significant part in enhancing coaches' learning during and after the CED programme.

244   Many of these mechanisms had previously been identified in CED research, such as the applied and

245   blended nature of the programme (Cushion et al., 2010) or the utilisation of previous knowledge and

246   experiences as departure points (Stodter & Cushion, 2016). However, to the best of our knowledge,

247   previous research has to date paid limited attention to the impact of *CDs' demeanour and personal*

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[5] Insight into the full evaluation of the CAP will be provided in a forthcoming paper.

248 *behaviours as mediators of coaches' commitment to CED programmes and motivators for lifelong*

249 *learning.* Given the relative strength of this mechanism identified in this particular case, the

250 remainder of this paper will focus solely on this important yet scarcely researched element of the

251 CED jigsaw.

252 The results section is therefore framed using the themes emanating from the data that describe

253 this mechanism, including (1) *being available, approachable, and supportive*; (2) *creating a sense of*

254 *belonging*; and (3) *raising coaches' aspirations by increasing their sense of purpose and duty*. Each

255 theme is presented and discussed below, and quotes used to illustrate participants' experiences.

256 Pseudonyms are used throughout the results to ensure participants' anonymity.

257 **Being Available, Approachable, and Supportive**

258 School coaches and coach coordinators frequently described the CAP's CDs as available,

259 approachable, and supportive. This was surprising to participants as in their previous experiences

260 "they [CDs] talk and after you can't find them… so we can't clarify things" (Coach 1, TP1). In

261 contrast, the CAP CDs were described as "on hand" (Coach 13, TP1) and "physically available"

262 (Coach 17, TP2) "[so that] we can interact with you every time we have difficulties in our activities...

263 Even though you [may be] doing things [busy], we know we can approach you any time" (Coach 1,

264 TP1). This was perceived to "improve our learning, as you are always roaming around, supporting us,

265 and observing what we are doing… That is the reason we learnt a lot." (Coach 7, TP2). This on

266 demand and non-judgemental support from the CDs was highly valued by the coaches, because "as a

267 beginner coach, I need ongoing support… I am glad you are here so we can ask questions" (Focus

268 Group 2, TP1). In addition, the supportive and approachable nature of the CDs was reported to have

269 created a safe learning environment in which coaches were not afraid to ask questions:

270   We used to be very hesitant to ask questions because if they [CDs] do not like your

271   question, they are just [dismissive or judgemental], but you have created this safe

272   environment for me. … Here we are not ashamed to ask questions, that is why we are

273   very thankful. (Coach Coordinator, School 1, TP1)

274   Here we have the time and strength [confidence], to ask questions, to clarify things. We

275   can understand and relate to you cos you are nice to us. There is learning because we

276   always dare to react to you. Have you noticed that every time we do not understand

277   something, we raise our hands and ask, or we give some situations [example]? … This

278   is very important for us because if we can ask questions, if we can clarify things, we can

279   learn. (Coach 1, TP2)

280 Finally, school coaches and coach coordinators appreciated that CDs' availability was not limited to

281 the face-to-face aspects of the CED programme. Instead, CDs provided regular site-visits and were

282 available through email, a Facebook group that functioned as a discussion forum, conference Skype

283 calls, and online webinars provided on topics coaches requested: "Staying in touch throughout [the

284 year] was very good, because I want communication to be constant. … Every time we see some

285 problems and can't solve it in our group we need [can rely on] your advice" (Coach 8, TP2).

286   This finding suggests that CDs' availability, approachability and supportive nature was

287 fundamental for the success of the CED programme. More specifically, coaches valued the authentic

288 and friendly relationship established between CDs and themselves, reportedly fostering balanced

289 power relations. This and the established rapport enhanced coaches' confidence to openly ask

290 question and get actively involved in the programme without fearing embarrassment. Underpinning

291 the feelings experienced by the coaches, was perhaps the constructivist view of learning that was

292 adapted by all CDs. It also intentionally guided the development and implementation of the

293   programme. Taking on this view allowed CDs to feel comfortable offering coaches opportunities to

294   input and shape the programme, yet also challenge their beliefs (i.e., cognitive dissonance; Jarvis,

295   2006) and allow time for the assimilation and accommodation of new knowledge (Moon, 2004).

296   The need to establish supportive environments to enhance learners' commitment and

297   motivation to training programmes, has previously been outlined in the youth sport coaching

298   literature (e.g., Fraser-Thomas, Côté, & Deakin, 2005; Gould & Carson, 2008). In particular, coaches

299   have been encouraged to (a) empower athletes through decision making and problem solving

300   opportunities; (b) offer positive reinforcement; (c) focus on athletes' strengths and interests; (d)

301   refrain from judgemental comments; (e) model positive behaviours such as empathy, patience, and

302   warmth; (f) show interest in athletes' lives beyond the sport context; and (g) acknowledge athletes'

303   perspectives and values to foster positive coach-athlete relationships (Côté, Bruner, Erickson,

304   Strachan, & Fraser-Thomas, 2010; Falcão, Bloom, & Bennie, 2017; Pierce, Kendellen, Camiré, &

305   Gould, 2018). In light of the current findings, it appears that the same principles apply to CD-coach

306   relationships. Yet, to our knowledge, only North (2010) has outlined that some coaches valued a

307   somewhat personal relationship with their CDs over a solely professional and instrumental one,

308   recognising that there is more to coach learning and development than coaching qualifications.

309   Indeed, some coaches in this and North's (2010) study reported feeling isolated, with limited

310   opportunities to discuss their coaching problems with 'friends' who possessed a good understanding

311   of the underlying issues involved, and who could thus function as nonthreatening and supportive

312   sounding boards. This process can also facilitate CDs understanding of the culture and context in

313   which CED takes place, enhancing their ability to provide appropriate support. Together, this

314   suggests that it may be fundamental for CDs to not only possess subject matter expertise, but also

315 soft skills such as empathy and flexibility that enable them to interact effectively with CED

316 programme attendees.

317 **Mediating a Sense of Belonging**

318   Interview and focus group data revealed that CAP participants perceived CDs as individuals

319 mediating a strong sense of belonging between themselves, the CED programme, and the larger

320 community of coaches and teachers. More specifically, participants reported working in isolation

321 prior to the CAP: "We were strangers to each other, but now we are always sharing [ideas], like a

322 family" (Coach 9, TP2). Coaches felt that CDs' personal demeanour and learner-centred educational

323 approach had encouraged and taught them to work collaboratively:

324   You showed us how to be a family. We did many group tasks and open discussions,

325   played games together, ate together, laughed together. We spent a lot of time together.

326   Your tasks and passion made us go back to our rooms after a [CAP] sessions and we

327   would discuss and brainstorm together. We brought that attitude back to our schools…

328   that we always try to ask each other "Is this good, what about this one?" … [We] have a

329   great time discussing and sharing ideas now. We never used to do that before the

330   training [CAP], but you taught us that we can learn from each other, cos we all have

331   talents in our own ways. (Coach 4, TP2)

332 This newly developed sense of belonging enhanced coaches' desire to learn and exchange ideas with

333 one another:

334   The level of camaraderie is much more now. Sometimes we keep on laughing in the

335   faculty room, but before we would never speak. Now we exchange ideas, ask questions

336   about how to improve. … This is thanks to you; you brought us together like this.

337   (Coach 2, TP2)

338 In addition, encouraging coaches to exchange ideas across different sports during the CAP appeared

339 to have made coaches "more open-minded… [For instance,] even though this is not your sport I now

340 believe you can give me some ideas or suggestions to make my coaching more effective" (Coach 9,

341 TP2). Coach 10 (TP1) explained that this open-mindedness did not exist prior to the CAP:

342   During the first meeting [CAP introductory course] we would often only talk with

343   coaches from the same sport, but you showed us that coaches from other sports can also

344   be helpful and I can be helpful to them, even if I don't play their sport. Now we talk

345   with all, like some coaches in soccer and coaches in volleyball.

346 Finally, Coach 9 (TP2) provided one of the most significant expressions of the positive effect the

347 newly developed sense of belonging had:

348   [When we question each other] now our words are not painful. We are helping each

349   other to improve, to achieve our goals. So we are not bonded now [just] because we are

350   under the sports programme, but we are bonded now because we are a family. Every

351   week we have a little reunion. We will spend the night here [at the school] to have a

352   coaching clinic and bond more. Then early in the morning we will train, applying the

353   learnt lessons. We are now a community, a solid family.

354   This finding suggests that, in addition to authentic relationships between CDs and CED

355 programme attendees, a strong emotional connection between coaches themselves can also enhance

356 their commitment to and learning beyond the duration of the CED programme. More importantly,

357 the data indicates that CDs can play a significant role in mediating a sense of belonging which can

358 facilitate a strong learning culture characterised by ongoing learning opportunities, empowerment,

359 collaboration, and personal growth (Marsick & Watkins, 2003).

360   A theory that could explain coaches' increased motivation to learn and develop

361   collaboratively during and beyond the CAP is Deci and Ryan's (2000) self-determination theory.

362   The theory suggests that individuals' motivation can be enhanced when feelings of relatedness,

363   competence, and autonomy are satisfied. Relatedness specifically has been defined as a "desire to

364   feel connected to others - to love and care, and to be loved and cared for" (Deci & Ryan, 2000, p.

365   231); a feeling that according to coaches within this study was absent from their coaching contexts

366   prior to the CAP. The positive effects of elevated feelings of relatedness have consistently been

367   highlighted in literature exploring coach-athlete relationships (e.g., Choi, Cho, & Huh, 2013;

368   Mageau & Vallerand, 2003) and team cohesion (e.g., Blanchard, Amiot, Perreault, Vallerand, &

369   Provencher, 2009; Hook & Newland, 2018); still, it appears that this concept has not yet been

370   explored in relation to coach learning and development. The value of social learning, especially the

371   notion of Communities of Practice (Lave & Wenger, 1991), has however been consistently reported

372   in the CED literature (Bertram, Culver & Gilbert, 2017). The link between the notion of

373   Communities of Practice and the development of a strong sense of belonging as a tool to enhance

374   the effectiveness of CED warrants further research.

375   Nevertheless, the current findings suggest that CDs fostering belongingness, which ultimately

376   enhanced feelings of competence and autonomy, have the potential to develop a coaching

377   workforce that collaborates with and facilitates each other's learning beyond the termination of

378   formal CED programmes.

379   **Raising Coaches' Aspirations by Increasing Their Sense of Purpose and Duty**

380   While motivated to do well for their athletes, coaches of both schools displayed high levels of

381   negativity towards their working environments prior to the CAP. These feelings were triggered by a

382   lack of appropriate coaching resources and facilities, as well as a consistent undermining of their dual

383 role by other members of staff. Despite this, CDs were able to raise coaches' individual and

384 collective aspiration by enhancing their sense of purpose and duty in two ways. First, CDs inspired

385 coaches to become the best coaches they can be, not only for their own sake, but to benefit their

386 athletes, colleagues, schools, and other coaches. For instance, coaches reported realising that their

387 responsibility towards athletes was much bigger than just helping them to improve their athletic

388 performances. Coach 1 (TP2) explained:

389   Before we started this programme, being an effective coach had another meaning for

390   me, it meant having a winning streak. Now I realised that being an effective coach isn't

391   about how many wins you have, but what your athletes learn from you that they can use

392   for their entire life, especially being disciplined and independent. … So the way I am

393   with my players now is not like before. Before, I kept shouting. Maybe for them I

394   looked like a monster, but now my players look at me like a father. I can say that

395   because during the graduation, two of my players kept on crying on my shoulder, saying

396   "Thank you so much, you've changed me". That's the thing that makes me cry and so

397   proud. You made me open minded and now I let them [the athletes] be part of me.

398 This increased sense of responsibility was noticeable throughout the whole cohort of coaches, who

399 now frequently referred to themselves as "guidance counsellors" (Coach 10, TP2) or second parents:

400   I have learnt how to handle the students, not only in terms of their physical skills, but

401   also as a holistic, whole person. I can now teach them how to handle emotions, how to

402   handle the stress. So I learnt how to take good care of them, not just being a coach, but

403   also a second mother to them. (Coach 3, T2)

404 Some coaches also felt motivated to pass their knowledge on to colleagues who did not have the

405 opportunity to be part of the CAP or were new to the programme. Coach 11 (TP2) explained: "I have

406 this bigger responsibility now, not just for me or my athletes, but also to my co-coaches and

407 colleagues at the school". Likewise, Coach 4 (TP2) reported that it was important "to share my

408 knowledge with the newbies and coaches who did not do the CAP, pass it [the knowledge] down the

409 family tree."

410   Second, CDs helped coaches realise that they were capable of designing coaching programmes

411 that suited them, their athletes, and their school facilities:

412   You didn't give us a sample programme to implement into our school, because you

413   really wanted us to make our own. You told us that we are the coaches and we are the

414   ones who know our athletes best. So there is no perfect programme that you can give

415   us… We had to make our own coaching curriculum and you taught us how to go about

416   it, the steps, but [ultimately] we are the ones who make the plan, who have to organise

417   it, and I now know we can [do this]. (Coach 4, TP2)

418   You said "try to think about it in your own setup, not on what you see, what you hear,

419   what is the ideal, but try to think of it in your own setup", because we have different

420   situations, our logistics will be different, the availability of some of the facilities. So you

421   really helped us to push our brains on how to approach the different tasks that you gave

422   us in our own setups. (Coach 14, TP1)

423 Coaches reported feeling empowered by this enhanced sense of duty and motivated to drive their

424 learning further:

425   In this programme you are emphasising not only [that we should] keep [on] learning,

426   and you do not just give us your ideas, but you are training us to become creative and

427   resourceful… You are making us independent coaches, not only dependent on the ideas

428   or the knowledge that you have given to us, but we need to make our own way of how

429   we can learn. (Coach 1, TP1)

430   This finding suggests that CDs can raise coaches' aspirations by explicitly outlining the positive

431   impact they can have on the holistic development and well-being of athletes and others involved in

432   their development. Research supporting the notion that coaching behaviours can positively affect

433   athletes' self-perceptions, adherence to sport, and psychosocial development has been around for over

434   50 years (Smith & Smoll, 2002; Smith, Smoll, & Curtis, 1979). Additionally, it appears universally

435   accepted that athletes' positive development needs to be triggered through appropriate training

436   patterns and social influences (Côté, Baker, & Abernethy, 2007; Côté & Vierimaa, 2014).

437   Nevertheless, it cannot be assumed that coaches in all contexts possess this knowledge, wherefore it

438   may be necessary that CDs clearly communicate this information to foster an enhanced sense of

439   purpose and duty in coaches of all ages and developmental stages.

440   Indeed, researchers investigating the characteristics of successful coaches have consistently

441   identified that strong feelings of purpose and duty are key drivers of coaches' accomplishments as

442   well as their commitment to lifelong learning (Kellet, 1999; Lara-Bercial & Mallett, 2016; Vallée &

443   Bloom, 2005, 2016). For instance, Lara-Bercial and Mallett (2016) identified that serial winning

444   coaches were characterised by 'driven benevolence', a "purposeful and determined pursuit of

445   excellence based on an enduring and balanced desire to considerately support oneself and others" (p.

446   33). In particular, this desire was underpinned by an enduring sense of responsibility for athletes,

447   coaching programmes, and even countries; allowing coaches to overcome setbacks and self-doubt

448   more readily as they were driven by a higher, self-less purpose. Focussing more specifically on

449   intercollegiate and high school coaches, Miller and Carpenter (2009) also reported that   coaches

450   frequently exposed high levels of altruism (i.e., a motivational state that aims to increase other's well-

451   being), motivating them to support their athletes professionally and personally. Together, these

452   findings thus support the notion that increased levels of purpose and duty can enhance coaches'

453   motivation for personal continuous improvement, as well as supporting others to fulfil their potential.

454   In summary, the present paper is among the first to focus solely on the personal characteristics of

455   effective CDs; thus extending our understanding of CDs' roles and responsibilities. Specifically, the

456   study provides a novel interpretation of the role of CDs as 'mediators of coaches' commitment to

457   CED programmes and motivators for lifelong learning'. As alluded to in the methods section, a key

458   tenant of the realist evaluation approach is that interventions do not work the same way across all

459   contexts, wherefore it is important to outline the specific CMO-configurations that explain the

460   successful collaboration between the CDs and coaches of this study before concluding this paper

461   (Pawson, 2013).

462   In relation to the context, it has to be stressed that coaches who participated in the CAP felt

463   'starved' of knowledge due to the perceived low quality and limited amount of CED opportunities

464   available to them. Regardless of their coaching experience, coaches attending the CAP were

465   characterised by limited amounts of knowledge regarding coaching theories and sport science

466   subjects. By their own admission, their coaching was mostly informed by their experience as athletes,

467   which in many cases was also limited. Within the context of this group of coaches, three mechanisms

468   were associated with the role of the CD as a motivator for learning: 1) being available, approachable

469   and supportive; 2) creating a sense of belonging; and 3) raising coaches' aspirations by increasing

470   their sense of purpose and duty. Together, these mechanisms fostered coaches' motivation to commit

471   to the CED programme and become learners who implemented and shared their newly gained

472   understanding of coaching to benefit their athletes, colleagues, schools, other coaches, and wider

473   community (i.e., outcome).

474 **Practical Implications**

475   Despite these findings being context specific, suggestions for the education and development of

476 CDs and future CED programmes can be proposed. First, the current findings support the notion that

477 CDs are not only subject matter experts, but individuals holding an array of roles, including leaders,

478 facilitators, mentors, assessors, and course designers (Abraham et al., 2013; North, 2010; McQuade &

479 Nash, 2015). The current findings also extend our understanding of CDs' roles by suggesting that

480 they also function as motivators for lifelong learning, inspiring coaches to go on honing and

481 improving their knowledge and skills even after the termination of formal CED. To have this effect, it

482 appears important that CDs possess so called soft skills, such as empathy, enthusiasm,

483 approachability, and authenticity, which have the potential to foster genuine rapport between CDs and

484 CED programme attendees. As a result, it is suggested that one professional developmental need of

485 CDs may be to evaluate the degree to which they possess or need to develop soft skills that allow

486 them to form meaningful, authentic, and supportive relationships with CED programme attendees.

487   Second, CDs should aim to mediate a sense of belonging by establishing positive and lasting

488 relationships between CED programme attendees. This is suggested to foster independence and

489 collaboration that has the potential to create a community that works together and facilitates each

490 other's learning independent from formal CED opportunities (Bertram et al., 2017). Consequently,

491 CDs should be taught and aim to foster team cohesion, as well as a culture in which coaches supports

492 each other's learning during (e.g., through frequent collaborative tasks), outside (e.g., through

493 extracurricular activities such as group dinners), and after (e.g., by encouraging coaches to hold

494 regular coaches' meetings) formal CED sessions and programmes.

495   Finally, CDs should make every effort to increase coaches' sense of purpose and duty by

496 communicating explicitly that coaches play a fundamental role in the holistic development of human

497   beings, ultimately affecting their well-being, competence, and development of life skills. This could

498   be achieved by drawing on literature focussing on and providing examples of youth athletes' positive

499   development (e.g., Côté et al., 2010; Fraser-Thomas et al., 2005).

500   **Strengths and Limitations**

501   Although the present study offered some practical results, strengths and limitations need to be

502   considered. A primary strength of this study was the use of a realist evaluation approach that allowed

503   for an in-depth evaluation of a large-scale, tailored, and longitudinal CED programme. The use of

504   realist evaluation 'forced' the researchers to look beyond the outcomes of the CED programme and

505   focus on the mechanisms that made the programme effective, providing novel insight into the

506   characteristics of effective CDs. Nevertheless, this research approach also carried its limitations. A

507   realist evaluation design is lengthy and messy and, in particular, the development of clear-cut CMO-

508   configurations presented a challenge as mechanisms and outcomes are interconnected. In addition, the

509   study was carried out with participants who were very receptive to change and grateful for this

510   development opportunity. In addition, their cultural background made coaches susceptible towards

511   forming strong, family-like social bonds. The same might not be the case in other contexts or

512   cultures. Finally, despite the longitudinal nature of the study, no follow-up has been conducted that

513   investigated the longevity of the effects CD's behaviours, knowledge, and practices had on coaches'

514   motivation towards lifelong learning.

515   **Conclusion and Future Research**

516   The present study was part of a large-scale investigation conducted to design, implement, and

517   evaluate a tailored CED programme for coaches in two Philippine high schools. The study focussed

518   specifically on the mechanisms that constituted effective coach development, providing a novel

519   interpretation of the role of CDs as 'motivators for lifelong learning'. In particular, three mechanisms

520   where identified that enabled CDs to inspire and bring coaches together, including 1) being available,

521   approachable and supportive; 2) creating a sense of belonging; and 3) raising coaches' aspirations by

522   increasing their sense of purpose and duty. Overall, the findings support the notion that CDs can

523   leave lasting impressions affecting coaches' motivation towards learning and exploring new coaching

524   practices. As a result, practical guidelines for the education of CDs, as well as future CED

525   programmes have been proposed in the hope to further enhance the professionalization of the

526   coaching workforce. Future research is needed to explore the validity of the provided guidelines. For

527   example, research should explore the role of CDs in fostering coaches' feelings of relatedness and its

528   effects upon their willingness to engage in continued, collaborative learning, as well as the need to

529   possess or develop soft skills for CDs to effectively collaborate with coaches. Finally and more

530   generally, more research is warranted that evaluates the mechanisms that foster the success or failure

531   of large-scale CED programmes.

532

533   **References**

534   Abraham, A., Morgan, G., North, J., Muir, B., Duffy, P., Allison, W., & Hodgson, R. (2013).

535   Task analysis of coach developers: Applications to the FA youth coach educator role. *In Proceedings*

536   *of the 11th International Conference on Naturalistic Decision Making (NDM 2013)* (pp. 21-24).

537   Belski, R., Donaldson, A., Staley, K., Skiadopoulos, A., Randle, E., O'Halloran, P., ... &

538   Nicholson, M. (2018). Brief education intervention increases nutrition knowledge and confidence of

539   coaches of junior Australian football teams. *International Journal of Sport Nutrition & Exercise*

540   *Metabolism, 28*, 259-265. doi:10.1123/ijsnem.2017-0170

541   Bertram, R., Culver, D.M., & Gilbert, W. (2017). A university sport coach community of

542   practice: Using a value creation framework to explore learning and social interactions. *International*

543   *Journal of Sport Science & Coaching, 12*, 287-302. doi:10.1177/1747954117710503

544   Bhaskar, R. (1998). Philosophy and scientific realism. In M. Archer, R. Bhaskar, A. Collier,

545   T. Lawson, & A. Norrie (Eds.), *Critical realism: Essential readings* (pp. 16-47). New York:

546   Routledge.

547   Blanchard, C. M., Amiot, C. E., Perreault, S., Vallerand, R. J., & Provencher, P. (2009).

548   Cohesiveness, coach's interpersonal style and psychological needs: Their effects on self-

549   determination and athletes' subjective well-being. *Psychology of Sport & Exercise*, *10*, 545-551.

550   doi:10.1016/j.psychsport.2009.02.005

551   Bowley, C., Cropley, B., Neil, R., Hanton, S., & Mitchell, I. (2018). A life skills development

552   programme for youth football coaches: Programme development and preliminary evaluation. *Sport &*

553   *Exercise Psychology Review, 14*, 3-22.

554   Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for*

555   *beginners*. London: Sage.

556   Camiré, M., Kendellen, K., Rathwell, S., & Felber Charbonneau, E. (2018). Evaluation of the

557   pilot implementation of the Coaching for Life Skills program. *International Sport Coaching Journal,*

558   *5*, 227-236. doi:10.1123/iscj.2018-0006

559   Choi, H., Cho, S., & Huh, J. (2013). The association between the perceived coach-athlete

560   relationship and athletes' basic psychological needs. *Social Behavior & Personality: an international*

561   *journal*, *41*, 1547-1556. doi:10.2224/sbp.2013.41.9.1547

562   Côté, J., Baker, J., & Abernethy, B. (2007). Practice and play in the development of sport

563   expertise. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of Sport Psychology* (3rd ed., pp. 184-

564   202). New York: Wiley.

565   Côté, J., Bruner, M., Erickson, K., Strachan, L., & Fraser-Thomas, J. (2010). Athlete

566   development and coaching. In J. Lyle & C. Cushion (Eds.), *Sport coaching: Professionalism and*

567   *practice* (pp. 63-84). Oxford: Elsevier.

568   Côté, J., & Vierimaa, M. (2014). The developmental model of sport participation: 15 years

569   after its first conceptualization. *Science & Sports, 29*, 63-69. doi:10.1016/j.scispo.2014.08.133

570   Cushion, C.J., Nelson, L., Armour, K.M., Kyle, J., Jones, R.L. & O'Callaghan, C. (2010).

571   *Coach Learning and Development: A Review of Literature.* Leeds: sports coach UK.

572   Deek, D., Werthner, P., Paquette, K. J., & Culver, D. (2013). Impact of a large-scale coach

573   education program from a lifelong-learning perspective. *Journal of Coaching Education, 6*, 23-42.

574   doi:10.1123/jce.6.1.23

575   Douge, B., & Hastie, P. (1993). Coach effectiveness. *Sport Science Review, 2*, 14-29.

576   Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and

577   the self-determination of behaviour. *Psychological Inquiry, 11*, 227-268.

578   doi:10.1207/S15327965PLI1104_01

579   Deek, D., Werthner, P., Paquette, K. J., & Culver, D. (2013). Impact of a large-scale coach

580   education program from a lifelong-learning perspective. *Journal of Coaching Education, 6*, 23-42.

581   doi:10.1123/jce.6.1.23

582   Driska, A. (2018). A formative, utilization-focused evaluation of USA swimming's

583   nationwide online coach education program. *International Sport Coaching Journal, 5*, 261-272.

584   doi:10.1123/iscj.2017-0096

585   Driska, A. P., & Gould, D. R. (2014). Evaluating a problem-based group learning strategy for

586   online, graduate-level coach education. *Kinesiology Review, 3*, 227-234. doi:10.1123/kr.2014-0061

587   European Commission (2017). *EU Work Plan for Sport 2017-2020*. Brussels: European

588   Commission.

589   Falcão, W. R., Bloom, G. A., & Bennie, A. (2017). Coaches' experiences learning and

590   applying the content of a humanistic coaching workshop in youth sport settings. *International Sport*

591   *Coaching Journal, 4*, 279-290. doi:10.1123/iscj.2017-0027

592   Falcão, W. R., Bloom, G. A., & Gilbert, W. D. (2012). Coaches' perceptions of a coach

593   training program designed to promote youth developmental outcomes. *Journal of Applied Sport*

594   *Psychology, 24*, 429-444. doi:10.1080/10413200.2012.692452

595   Ferrar, P., Hosea, L., Henson, M., Dubina, N., Kruegar, G., Staff, J., & Gilbert, W. (2018).

596   Building high performance coach-athlete relationships: The USOC's National Teach Coach

597   Leadership Education Program (NTCLEP). *International Sport Coaching Journal, 5*, 60-70.

598   doi:10.1123/iscj.2017-0102

599   Fraser-Thomas, J., Côté, J., & Deakin, J. (2005). Youth sport programs: An avenue to foster

600   positive youth development. *Physical Education & Sport Pedagogy, 10*, 19-40.

601   doi:10.1080/1740898042000334890

602   Gianotti, S., Hume, P. A., & Tunstall, H. (2010). Efficacy of injury prevention related coach

603   education within netball and soccer. *Journal of Science & Medicine in Sport, 13*, 32-35.

604   doi:10.1016/j.jsams.2008.07.010

605   Gilbert, W., & Trudel, P. (1999). An evaluation strategy for coach education programs.

606   *Journal of Sport Behaviour, 22*, 234-250.

607   Glang, A., Koester, M. C., Beaver, S. V., Clay, J. E., & McLaughlin, K. A. (2010). Online

608   training in sports concussion for youth sports coaches. *International Journal of Sports Science &*

609   *Coaching, 5,* 1-12. doi:10.1260/1747-9541.5.1.1

610   Gould, D., & Carson, S. (2008). Life skills development through sport: Current status and

611   future directions*. International Review of Sport & Exercise Psychology, 1*, 58-78.

612   doi:10.1080/17509840701834573

613   Goslin, A. E., & Davies, K. (2014). Measuring service quality of international tennis coach

614   education courses. *African Journal for Physical, Health Education, Recreation & Dance, 20*, 11-23.

615   Griffiths, M. A., Armour, K. M., & Cushion, C. J. (2018). 'Trying to get our message across':

616   Successes and challenges in an evidence-based professional development programme for sport

617   coaches. *Sport, Education & Society, 23*, 283-295. doi:10.1080/13573322.2016.1182014

618   Hook, R., & Newland, A. (2018). A basic needs coaching paradigm for coaches of

619   intercollegiate and high school athletes. *Journal of Sport Psychology in Action, 9*, 182-195.

620   doi:10.1080/21520704.2018.1463328

621   Hussain, A., Trudel, P., Patrick, T., & Rossi, A. (2012). Reflections on a novel coach

622   education program: A narrative analysis. *International Journal of Sports Science & Coaching*, 7,

623   227-240. doi:10.1260/1747-9541.7.2.227

624   ICCE, ASOIF & LBU (2012). *The International Coach Developer Framework.* Leeds: ICCE

625   ICCE, ASOIF, & LBU (2013). *The International Sport Coaching Framework v1.2.*

626   Champaign: Human Kinetics.

627   Jarvis, P. (2006). *Towards a comprehensive theory of learning*. London: Routledge.

628   Kellett, P. (1999). Organisational leadership lessons from professional coaches. *Sport*

629   *Management Review, 2*, 150-171. doi:10.1016/S1441-3523(99)70094-X

630   Koh, K. T., Camiré, M., Bloom, G. A., & Wang, C. K. J. (2017). Creation, implementation,

631   and evaluation of a values-based training program for sport coaches and physical education teachers

632   in Singapore. *International Journal of Sports Sciences & Coaching, 12*, 795-806.

633   doi:10.1177/1747954117730987

634   Langan, E., Blake, C., & Lonsdale, C. (2013). Systematic review of the effectiveness of

635   interpersonal coach education interventions on athlete outcomes. *Psychology of Sport & Exercise, 14*,

636   37-49. doi:10.1016/j.psychsport.2012.06.007

637   Lara-Bercial, S. (2018). *Understanding and improving children and young people's*

638   *developmental outcomes in sport: a psychosocial perspective*. Unpublished doctoral thesis. Leeds:

639   Leeds Beckett University.

640   Lara-Bercial, S., & Mallett, C. (2016). The practices and developmental pathways of

641   professional and Olympic serial winning coaches. *International Sport Coaching Journal, 3*, 221-239.

642   doi:10.1123/iscj.2016-0083

643   Lara-Bercial, S., North, J., Petrovic, L., Minkhorst, J., Oltmanns, K., & Hämäläinen, K.

644   (2017). *The European Sport Coaching Framework*. Champaign: Human Kinetics.

645   Lave, J., & Wenger, E. (1991). *Situated Learning*: *Legitimate Peripheral Participation.*

646   Cambridge: Cambridge University Press.

647   Lisinskiene, A. (2018). The effect of a 6-month coach educational program on strengthening

648   coach-athlete interpersonal relationships in individual youth sport. *Sports*, *6*, 74.

649   doi:10.3390/sports6030074

650   MacDonald, D. J., Côté, J., & Deakin, J. (2010). The impact of informal coach training on the

651   personal development of youth sport athletes. *International Journal of Sports Science & Coaching, 5*,

652   363-372. doi:10.1260/1747-9541.5.3.363

653   Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational

654   model. *Journal of Sports Science*, *21*, 883-904. doi:10.1080/0264041031000140374

655   Marsick, V., & Watkins, K. (2003). Demonstrating the value of an organization's learning

656   culture: The dimensions of the learning organization questionnaire. *Advances in Developing Human*

657   *Resources, 5*, 132-151. doi:10.1177/1523422303005002002

658   McQuade, S., & Nash, C. (2015). The role of the coach developer in supporting and guiding

659   coach learning. *International Sport Coaching Journal, 2*, 339-346. doi:10.1123/iscj.2015-0059

660   Miller, L. M., & Carpenter, C. L. (2009). Altruistic leadership strategies in coaching: A case

661   study of Jim Tressel of the Ohio State University. *Strategies, 22*, 9-12.

662   doi:10.1080/08924562.2009.10590826

663   Moon, J. (2004). *A handbook of reflective and experiential learning: Theory and practice*.

664   London: Routledge.

665   Morgan, K., Jones, R. L., Gilbourne, D., & Llewellyn, D. (2013). Changing the face of coach

666   education: Using ethno-drama to depict lived realities. *Physical Education & Sport Pedagogy, 18*,

667   520-533. doi:10.1080/17408989.2012.690863

668   Nelson, L., Cushion, C., & Potrac, P. (2013). Enhancing the provision of coach education:

669   The recommendations of UK coaching practitioners. *Physical Education & Sport Pedagogy, 18*, 204-

670   218. doi:10.1080/17408989.2011.649725

671   North, J. (2009). *The UK Coaching Workforce Report 2009-2016*. Leeds: Sports Coach UK.

672   North, J. (2010). Using 'coach developers' to facilitate coach learning and development:

673   Qualitative evidence from the UK. *International Journal of Sports Science & Coaching, 5*, 239-256.

674   doi:10.1260/1747-9541.5.2.239

675   Pawson, R. (2013). *The Science of Evaluation*. London: Sage.

676   Pawson, R., & Tilly, N. (1997). *Realistic Evaluation*. London: Sage.

677   Pierce, S., Kendellen, K., Camiré, M., & Gould, D. (2018). Strategies for coaching for life

678   skills transfer. *Journal of Sport Psychology in Action, 9*, 11-20. doi:10.1080/21520704.2016.1263982

679   Santos, F., Camiré, M., MacDonald, D. J., Campos, H., Conceição, M., & Silva, P. (2017).

680   Youth sport coaches' perspective on positive youth development and its worth in mainstream coach

681   education courses. *International Sport Coaching Journal, 4*, 38-46. doi:10.1123/iscj.2016-0092

682   Smith, B., & McGannon, K. (2018). Developing rigor in qualitative research: Problems and

683   opportunities within sport and exercise psychology. *International Review of Sport & Exercise

684   Psychology, 11*, 101-121. doi:10.1080/1750984X.2017.1317357

685   Smith, R. E., & Smoll, F. L. (2002). *Way to go, coach!: A scientifically-proven approach to

686   youth sports coaching effectiveness*. Portola Valley: Warde Publishers.

687   Smith, R. E., Smoll, F. L., & Curtis, B. (1979). Coach effectiveness training: A cognitive-

688   behavioral approach to enhancing relationship skills in youth sport coaches. *Journal of Sport

689   Psychology, 1*, 59-75. doi:10.1123/jsp.1.1.59

690   Sparkes, A., & Smith, B. (2014). *Qualitative research methods in sport, exercise and health:*

691   *From process to product*. Cambridge: Routledge.

692   Stirling, A. E., Kerr, G. A., & Cruz, L.C. (2012). An evaluation of Canada's national

693   coaching certification program's Make Ethical Decisions coach education module. *International*

694   *Journal of Coaching Science, 6*, 45-60.

695   Stodter, A. & Cushion, C.J. (2016). Effective coach learning and processes of coaches'

696   knowledge development: What works? In P.A. Davis (Ed.) *The Psychology of Effective Coaching &*

697   *Management*. New York: Nova Science Publishers, 35-52.

698   Stoszkowski, J., & Collins, D. (2018). The agony and the ecstasy: Student-coaches'

699   perceptions of a heutagogical approach to coach development. *International Sport Coaching Journal,*

700   *5*, 136-144. doi:10.1123/iscj.2017-0077

701   Strachan, L., MacDonald, D. J., & Côté, J. (2016). Project SCORE! Coaches' perceptions of

702   an online tool to promote positive youth development in sport. *International Journal of Sports*

703   *Science & Coaching, 11*, 108-115. doi:10.1177/1747954115624827

704   Trudel, P., Gilbert, W., & Werthner, P. (2010). Coaching education effectiveness. In J. Lyle

705   & C. Cushion (Eds.), *Sports coaching: Professionalisation and practice* (pp. 135-152). London:

706   Elsevier.

707   Van Hoye, A., Larsen, T., Sovik, M., Wold, B., Heuzé, J. P., Samdal, O., ... & Sarrazin, P.

708   (2015). Evaluation of the Coaches Educators training implementation of the PAPA project: A

709   comparison between Norway and France. *Scandinavian Journal of Medicine & Science in Sports*, 25,

710   539-546. doi:10.1111/sms.12352

711   Vallée, C. N., & Bloom, G. A. (2005). Building a successful program: Perspectives of expert

712   Canadian female coaches of team sports. *Journal of Applied Sport Psychology, 17*, 179-196.

713   doi:10.1080/10413200591010021

714   Valleé, C. N., & Bloom, G. A. (2016). Four keys to building a championship culture.

715   *International Sport Coaching Journal, 3*, 170-177. doi:10.1123/iscj.2016-0010

716   Vella, S. A., Crowe, T. P., & Oades, L. G. (2013). Increasing the effectiveness of formal

717   coach education: Evidence of a parallel process. *International Journal of Sports Science & Coaching,*

718   *8*, 417-430. doi:10.1260/1747-9541.8.2.417

719   **Table 1**

720   *Papers evaluating coach education and development interventions between 2008-2019*

Authors	Context	Participants involved in the evaluation process	Aim of research
Small Scale Programmes (i.e., short duration and focused on a single topic; for instance a workshop)			
Belski et al. (2018)	Junior Australian football	78 coaches	Evaluation of the impact of a brief (20-min) nutrition education intervention embedded in an existing mandatory coach education course.
Bowley, Cropley, Neil, Hanton, & Mitchell (2018)	Grassroots soccer	22 Level 1 and 23 Level 2 coaches	Evaluation of a coach education programme aimed at enhancing coaches' competence and confidence to integrate life skills development as a formal part of their coaching practice.
Camiré, Kendellen, Rathwell, & Charbonneau (2018)	High school sports, including basketball, volleyball, and football	10 coaches	Evaluation of coaches' experience of the pilot implementation of the Coaching for Life Skills program.
Driska & Gould (2014)	University programme	22 masters and doctoral students	Evaluation of an online course combining the principles of a community of practice with problem-based learning to enhance coaches' reflective practice skills.
Falcão, Bloom, & Bennie (2017)	Youth sport basketball	12 coaches	Evaluation of coaches' perceptions of a humanistic coaching workshop and their experiences of using the approach.
Falcão, Bloom, & Gilbert (2012)	Youth soccer and basketball from recreational and competitive leagues	6 youth sport coaches	Evaluation of coaches' perceptions on the impact of a coach training programme designed to promote youth developmental outcomes.
Ferrar et al., (2018)	USA Archery and USA Cycling	2 coaches	Evaluation of a coach-athlete relationship coach education seminar that was part of the United States Olympic Committee's National Team Coach Leadership Education Program.

Gianotti, Hume, & Tunstall (2010)	Community netball and soccer	271 netball and 71 soccer coaches	Evaluation of the efficacy of integrating sports injury prevention knowledge into coach education programmes.
Glang, Koester, Beaver, Clay, & McLaughlin (2010)	Youth sport	75 youth community coaches	Evaluation of an online concussion training programme designed to train community coaches of youth athletes in effective sports concussion prevention and management practices.
Koh, Camiré, Bloom, & Wang (2017)	Youth sport and physical education at primary and secondary schools	4 coaches 4 physical education teachers	Evaluation of a values-based training programme aimed at enhancing coaches' and teachers' ability to teach values to athletes and students.
MacDonald, Cote, & Deakin (2010)	Youth sport, including basketball, dance, hockey, ringette, soccer, softball, and volleyball.	10 programme administrators from youth sport programmes and 109 male and female athletes	Evaluation of the impact of an informal coach training programme on the personal development of youth sport participants.
Morgan, Jones, Gilbourne, & Llewellyn (2013)	University programme	15 masters students	Evaluation of a pilot intervention using ethno-drama as a tool to enhance problem-based learning.
Santos et al., (2017)	Youth Sports	7 coaches	Process and outcome evaluation of a positive youth development-focused online coach education course.
Stirling, Kerr, & Cruz (2012)	Multiple sports and contexts	Phase 1 – 30 coaches Phase 2 – 3742 coaches	Evaluation of Canada's National Coaching Certification Program's "Make Ethical Decisions" coach education module.
Stoszkowski & Collins (2018)	University programme	26 student-coaches	Evaluation of student-coaches' experiences of a sports coaching bachelor degree module that was underpinned by a heutagogical learning approach.
Strachan, MacDonald, & Côté (2016)	Youth sport, including soccer, volleyball, and hockey.	4 youth sport coaches	Evaluation of coaches' perceptions of Project SCORE!, an online tool to promote positive youth development in sport.

Van Hoye et al. (2015)	Grassroots soccer	18 coach developers	Cross-culturally comparison of the implementation process of the Empowering Coaching™ training programme that aims to enhance children's health.
Vella, Crowe, & Oades (2013)	Community soccer	9 coaches	Evaluation of a formal transformational leadership training programme for coaches.

Large Scale Programmes (i.e., long duration and multiple topics; for instance an National Governing Body qualification)

Deek, Werthner, Paquette, & Culver (2013)	Flat water kayak, field hockey, ringette, sailing, and soccer	10 coaches	Evaluation of the impact of a coach education programme on coach learning and perceived changes to coaching practices, while situating this episodic learning experience within a lifelong learning perspective.
Driska (2018)	Swimming	21 coaches	A formative, utilization-focused evaluation of USA Swimming's nationwide online coach education programme.
Goslin & Davies (2014)	Tennis	56 coaches	Evaluation of the perceived service quality of the International Tennis Federation Starter-Beginner coach education courses.
Griffiths, Armour, & Cushion (2018)	Youth sport	7 senior managers, 8 coach educators, 8 Academy club directors, and 12 sports club coaches	Evaluation of a coach education programme provided by a major national governing body of sport in the UK.
Hussain, Trudel, Patrick, & Rossi (2012)	Development/Elite Triathlon	1 high performance director/programme designer	Evaluation of the implementation of a novel coach education programme in the competition-development context, developed by Triathlon Canada's former high performance director.
Lisinskiene (2018)	Youth martial arts	10 coaches	Evaluation of an educational programme for coaches aimed at strengthening coach-athlete interpersonal relationships.
Nelson, Cushion, & Potrac (2013)	Mix of contexts and sports	90 coaches	Overall evaluation of the coach education system in the UK.

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722　**Table 2**

723　*Coach Advancement Programme (CAP) schedule and content*

CAP Phase	Content
CAP Introductory Course	**Six-day residential including:** • Seven hours a day of CD-led delivery of curricular subjects, including for instance planning, pedagogy, sport psychology, and strength and conditioning. • Personal reflection tasks that provided coaches with a chance to assimilate and accommodate the content of the course and identify how it could be embedded into their respective contexts • Evening group activities to foster team cohesion • Development of a personal action plan to provide coaches with a developmental focus for the on-the-job practicum • Setting of tasks to be complete during the on-the-job practicum
CAP On-the-job Practicum	**Completion of set tasks throughout a full season (i.e., 10 months), including:** • Collaborative tasks as a school: 　▪ Development of a School Talent Identification and Development Plan 　▪ Completion of a Player Injury Profile and Database • Collaborative tasks as a family of sports: 　▪ Creation of a Sport Specific Curriculum 　▪ Development of a brief paper stating the specific strength and conditioning needs of coaches' respective sports • Individual tasks as a coach: 　▪ Follow up on personal action plan 　▪ Creation of a season plan 　▪ Keeping of a record of all session plans 　▪ Keeping of a personal reflective journal • Further development opportunities: 　▪ Online webinars with CDs 　▪ CD site visits 　▪ Monthly coaches' meetings 　▪ Regular 'Buddy' Coach Discussion 　▪ Facebook group which functioned as a forum for discussions
CAP Consolidation Course	**Five-day residential including:** • 'Live' coaching session with student-athletes demonstrations by CDs and coaches leading to group discussions and reflections • Review of key content from the CAP Introductory Course and 'open consultation surgeries' with CDs • Presentation of school Talent Identification and Development Plans • Peer to peer presentation of pre-set tasks from CAP Introductory Course, including Full Sport Curricula and Annual Plan • Delivery of sport psychology modules

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