A Qualitative Meta-Study of a Decade of the Holistic Ecological Approach to Talent Development

Abstract

The Holistic-Ecological Approach (HEA) was introduced in 2010, and it is now important to provide a critical review after a decade of research elaborating on the framework. The purpose of this study was to critically assess the methodological and theoretical trends in research using the HEA in the study of athletic talent development environments (ATDE). We used a qualitative meta-study to review twelve studies published from 2010 to the first quarter of 2021. Our meta-theory analysis found that future studies should consider the use of Bronfenbrenner's work on development and address previous critiques on its use since it can limit the potential of the HEA research. In the meta-methods, we found that all studies used multiple and varied data collection strategies (e.g., interviews, observations, organisational documents). We also found a high degree of transparency and rigour exemplified by using multiple validity strategies. Method weaknesses were an underrepresentation of neutral or negative cases. The meta-data analysis showed that most ATDEs were classified as successful or unsuccessful ahead of data collection, suggesting potential confirmation bias. We also found that all ATDEs had competing findings, which suggests a need for exploring negative or ambiguous findings. Future research could benefit from clarifying the use of underlying theoretical assumptions; contrasting findings with neutral cases, outliers, and negative cases to clarify the definition of successful ATDEs; and expanding on the methodological approach.

Keywords: sports psychology; talent development environments; organisational psychology; research rigour; meta-synthesis

22   **A Qualitative Meta-Study of the Holistic Ecological Approach to Talent Develop-**

23   **ment**

24   Talent development researchers have considered the nature of the person-environ-

25   ment interactions for decades. Examples of doing so are Bloom's talent development

26   phases (Bloom, 1985), communities of practice (Wenger, 1998), the influence of family

27   (Côté, 1999), and The Differentiating Model of Giftedness and Talent (DMGT; Gagné,

28   2013). This line of research acknowledges that development never occurs in a vacuum

29   where activities can be studied or understood without reference to the environment

30   (Davids et al., 2017). Researchers should therefore consider the reciprocal adaptation

31   between a developing athlete and the people in the environment. Such adaptation is hy-

32   pothesised to have a more significant impact in stable and advantageous environments

33   (Bronfenbrenner, 1999). Talented athletes might, therefore, be those acquiring exception-

34   ally functional relationships with their environment (Araújo et al., 2009). Therefore, one

35   athletic talent development environment (ATDE) might be superior to others in its capac-

36   ity to guide developing athletes (Henriksen & Stambulova, 2017).

37   In the past decade, an important development in the research on talent develop-

38   ment was the introduction of the Holistic-Ecological Approach (HEA). It builds on calls

39   for examining the environment or context in which athletes develop (Araújo et al., 2009;

40   Martindale, 2005). In general, environment-focused research highlights three different

41   approaches (Li et al., 2014). First, it can refer to 'all aspects of the coaching situation'

42   (Martindale, 2005, p. 354). Second, it might refer to a transformation process of extending

43   aptitude into outstanding abilities in a specific domain over a long term (Gagné, 2011).

44   Last, Henriksen and Stambulova (2017) propose the following ecological definition of

45   athletic talent development:

46   … the progressive mutual accommodation that takes place between an as-

47   piring athlete and a composite and dynamic sporting and non-sporting envi-

48   ronment that supports the development of the personal, psycho-social and

49   sport-specific skills required for the pursuit of an elite athletic career (p.

50   272)

51   These definitions are vast and potentially include a diverse range of topics (e.g.,

52 psycho-social development or skill development). Li, Wang, and Pyun (2014) contributed

53 to our collective understanding of ATDEs by providing us with taxonomy. They did so

54 by adopting the definition from Gagné (2011) to collate research in three areas: milieu,

55 individuals, and provisions (Li et al., 2014). Although this study provides increased clar-

56 ity regarding current knowledge on ATDE factors, a limitation of the review is that it

57 does not critically assess the methodological and theoretical trends. Without this crucial

58 piece of the puzzle, we are left with a classification of terminology, albeit without avenues

59 for how to further this line of research.

60   The International Olympic Committee's consensus statement on youth athletic

61 development (Bergeron et al., 2015) and The Great British Medallists Project (Rees et al.,

62 2016) also helped establish a solid understanding of effective ATDEs. Yet, neither of

63 these synthesise the current research landscape to identify critical avenues for future re-

64 search. Collectively, these studies alert us to a gap in the research in that we may have a

65 promising idea of what an ATDE is. However, neither of the reviews mentioned above

66 are concerned about 'how' this research was conducted. We focus on addressing this gap

67 in the current study.

68   A qualitative meta-study would address the limitations above to provide a foun-

69 dation for how to advance knowledge (Holt et al., 2017; Walsh & Downe, 2005). After

70 ten years of introducing and elaborating on ATDEs, we also believe that it is time to carry

71   out a critical review and start a dialogue on how to move this line of research forward.

72   Also, a review is warranted considering the significant impact the HEA has on talent

73   development in countries such as Denmark (Diment et al., 2020) and England (Sport

74   England, 2018). Synthesising the methods and theoretical underpinnings can provide a

75   substantial contribution to the field since it seeks to create more familiarity with the meth-

76   odological landscape and the process of adapting those methods (Levitt et al., 2018). The

77   present review adopts a qualitative meta-study to address a twofold purpose (Walsh &

78   Downe, 2005). First, this study seeks to critically assess the methodological and

79   theoretical trends (i.e., to examine the congruency in underpinning theory) in research on

80   ATDEs using the HEA. Second, the study seeks to reinterpret key research topics and

81   findings to identify critical research gaps.

82   **Methods**

83   **Sources**

84   We used the following primary sources to locate published full-length peer-

85   reviewed articles on ATDEs using the HEA: (a) electronic searches using keywords

86   (Table 1) of online databases SPORTDiscus, Pubmed, ProQuest and PsychLIT, Web of

87   Science, OpenGrey, Scopus; (b) citations from papers identified through the electronic

88   searches; and (c) hand searching relevant journals including *The Sport Psychologist,*

89   *International Journal of Sport Psychology, International Journal of Sport and Exercise*

90   *Psychology, Journal of Applied Sport Psychology, Journal of Sport & Exercise*

91   *Psychology, Journal of Sport Behavior, Medicine and Science in Sport and Exercise,*

92   *Journal of Sports Sciences, Sport and Exercise Psychology Review, Research Quarterly*

93   *in Sport and Exercise, Journal of Sociology of Sport, the Scandinavian Journal of Sport*

94   *and Exercise Psychology, and Quest*.

Procedure

95

96   The present study followed the guidelines for a qualitative meta-study as outlined

97   by Paterson et al. (2001). The topic was ATDEs using the HEA as defined by Henriksen

98   and Stambulova (2017). The first and second author carried out each of the steps in the

99   procedure and later discussed among all authors before moving on to the next step to

100   resolve discrepancies. We defined boundaries and search keywords using the Sixth ver-

101   sion of the Thames Valley and Wessex Literature Search Protocol (2016). We left the

102   search terms wide since some articles might use the HEA; and yet, not describe it in the

103   title, abstract, nor keywords. After reaching consensus, the first author searched relevant

104   databases using the keywords, hand-searching journals, and citations in the articles found

105   in the database search in the autumn of 2016 and repeated the search in the autumn of

106   2019. We identified three hundred and seventeen studies potential studies. The first step

107   entailed screening the titles, abstracts, and keywords against the inclusion criteria (Table

108   1) and topics. This process excluded two hundred and thirty-three studies. The first and

109   second author assessed hard copies of eighty-four studies against the CASP Qualitative

110   Checklist (Critical Appraisal Skills Programme, 2013). This process excluded thirty-eight

111   studies due to not fitting the content area, having unclear aims, lack of ethical clarifica-

112   tion, and ambiguity regarding aims and purposes in different sections (Figure 1). The first

113   author assessed forty-six studies against an assessment protocol adapted from Paterson et

114   al. (2001), focusing on dominant cognitive paradigms that provided direction to the

115   included research, ultimately excluding thirty-four studies (Figure 1). Twelve studies

116   were presented to the research team before excluding three studies. As a part of the review

117   process, we completed the search again and included four additional studies which were

118   published/accepted in the interim after the second search in 2019 and the publishing of

119   the current review (See Table 2, studies marked with *). The twelve included studies all

120   used the HEA and the working models, ATDE and ESF.

121   [*Please insert Table 2 around here*]

122   **The Meta-Study**

123   We reviewed the rigour of the epistemological and methodological underpinnings

124   of the included sample (Booth et al., 2012; Holt et al., 2017). Going beyond merely ag-

125   gregating results, we aimed to provide an interpretive account of the results and findings

126   in qualitative research (Paterson et al., 2001). We did so by carrying out four interrelated

127   phases: meta-methods, meta-theory, meta-data-analysis, and meta-synthesis as outlined

128   by Paterson et al. (2001).

129   Meta-methods and meta-theory helped address questions of theoretical underpin-

130   nings, methodological diversity, and theoretical patterns in the included body of research

131   (Culver, 2012; Ronkainen et al., 2016). This process also included a critical analysis of

132   how theory has informed subsequent methodological decisions and interpretations of

133   findings (Ronkainen et al., 2016). We analysed epistemological soundness by considering

134   how researchers signalled transparency in the thread and congruence from aims, through

135   epistemology, to methodological choices (Collins & Stockton, 2018; Culver, 2012).

136   The meta-data-analysis was a synthesis and reinterpretation of findings in the light

137   of findings in other studies (Paterson et al., 2001; Ronkainen et al., 2016). We also ana-

138   lysed the findings against the features of successful ATDEs (see Henriksen et al., 2010a).

139   All co-authors acted in the role of a critical friend (e.g., asking critical questions to clarify

140   choices and potential gaps) throughout the analysis to stimulate the reflexive process of

141   seeking complex and layered interpretations (Costa & Kallick, 1993; Smith &

142   McGannon, 2018).

143 **Results and Discussion**

144   We proceed to illuminate the findings of the meta-theory and meta-method ex-

145 traction (Table 2) followed by the meta-data-analysis. Last, we bring all the parts together

146 in a synthesis of critical issues, limitation, and future directions.

147 **Meta-theory**

148   HEA's underpinning theory includes Bronfenbrenner's ecological theory of hu-

149 man development (Bronfenbrenner, 1979), systems theory (Patton & McMahon, 2014),

150 and organisational culture (Schein, 1990). Together, these theories assist researchers 'in

151 viewing ATDEs as systems with certain functions, components, structure and develop-

152 ment' (Henriksen et al., 2010a, p. 213). We found some unclear use of Bronfenbrenner

153 as the underpinning theory for the ATDE working model. We also found some potential

154 issues with the use of Schein's (1990) integration perspective on organisational culture in

155 the ESF working model. The use of both is described in this section, and we discuss po-

156 tential issues in the meta-synthesis below.

157 *Bronfenbrenner as the Underpinning Theory*

158   We found that a limitation to the included studies was uncertainty in their refer-

159 ences to underpinning theory regarding the ATDE working model. The studies fell into

160 four categories. First, those influenced by Bronfenbrenner's (1979) early work, which

161 consists of two papers (Aalberg & Sæther, 2016; Henriksen et al., 2010a). Second, one

162 paper (Seanor et al., 2017) influenced by the second phase (Bronfenbrenner, 1994). Third,

163 one paper (Henriksen et al., 2011) directly cited Bronfenbrenner's Bioecological theory

164 (2005). Last, there were eight studies with no direct reference to Bronfenbrenner's theo-

165 retical influence. Yet, this group is subdivided into two papers (Henriksen et al., 2014;

166 Larsen et al., 2013) citing the bioecological framework via Krebs (2009) and the remain-

167 ing five papers (Flatgård et al., 2020; Haukli et al., *Accepted*; Henriksen et al., 2010b;

168 Larsen et al., 2020; Mathorne et al., 2020; Ryom et al., 2020) citing studies based on

169 different theoretical underpinnings. Using different phases of Bronfenbrenner's work has

170 previously been criticised (Tudge et al., 2009) and is, therefore, an important point to

171 consider moving forward. Using Bronfenbrenner's early work would entail looking pre-

172 dominantly at the environment. However, using Bronfenbrenner's (2005) bioecological

173 framework would entail being specific about the characteristics of the individual and the

174 developmental processes over time. The underpinnings of the Bioecological framework

175 might be best suited considering the importance of examining the reciprocal adaptation

176 between athlete and the environment.

177 ***Theoretical Underpinnings of the ESF Model***

178 A central feature in the ESF model deals with the organisational culture.

179 Henriksen et al. (2010a) also suggest that it is a key feature of successful environments.

180 The underpinning theory is Schein's (1990, 2010) work on organisational culture. It is

181 used in a consistent way in all studies. Albeit, Mathorne et al. (2020) use a derivative to

182 show the philosophy of collaboration rather than organisational culture.

183 **Meta-Methods**

184 ***Approaches to Inquiry***

185 All studies favoured a descriptive approach to inquiry (Table 2), and of the twelve

186 studies, only one was theory testing (Henriksen et al., 2014). Considering the limitations

187 described in the meta-theory section, however, we found that the approaches to inquiry

188 represented a significant strength of the body of research. All studies balanced theory and

189 an exploratory approach with multiple data collection strategies, including ethnography.

190 Considering findings by Culver et al. (2012), we suggest that it is rare to see a body of

191 research with such an awareness of the implications of the working models and how they

192 link to the data collection strategies. Yet, future research could benefit from examining

193   ATDEs through more theory-testing research of the definitions and proposed success fac-

194   tors.

195   *Setting*

196   The HEA is mainly employed in Scandinavia and is a distinct Scandinavian con-

197   tribution to international scholarship. Four studies researched environments in Denmark,

198   four studies set in Norway and one study in Sweden. The last three studies were from

199   Ontario, Canada (Seanor et al., 2017), Belgium (Ryom et al., 2020), and the Netherlands

200   (Larsen et al., 2020) (Table 2). Asides from nationality, the sample represents seven dif-

201   ferent sports (i.e., football n=6, golf n=1, sailing n=1, track and field n=1, kayak n=1,

202   swimming n=1, and gymnastics n=1).

203   *Sampling*

204   Nine studies (Haukli et al., *Accepted*; Henriksen et al., 2010a, 2010b, 2011; Larsen

205   et al., 2013, 2020; Mathorne et al., 2020; Ryom et al., 2020; Seanor et al., 2017) were

206   categorised as successful from the outset. ATDEs were considered successful based on

207   track records of producing elite athletes. Theory testing research would entail sampling

208   neutral environments and testing the ATDEs for the presence of the proposed success

209   factors. The remaining studies featured one predetermined unsuccessful ATDE

210   (Henriksen et al., 2014) and two neutral ATDEs (Aalberg & Sæther, 2016; Flatgård et al.,

211   2020).

212   *Data-Collection Strategies*

213   Contrary to other reviews focused on a body of qualitative research in sport

214   psychology (e.g., Culver, 2012; Ronkainen et al., 2015), we did not find an exclusive

215   reliance on interviews. It is clear, in the sampled studies, that they increased their rigour

216   by including multiple data-collection strategies (Figure 2). We found that ethnography,

217   observations, analysis of documents, and guided walks might be critical strategies to

218 adopt in the future to reveal the breadth and fluid nature of complex environments (Lewis

219 et al., 2014).

220 ***Data-Analysis Strategies***

221   The data-analysis strategies represent a change from the first five to the later seven

222 studies (Table 2). The first five studies all used an inductive-deductive meaning conden-

223 sation approach. Three of which (Henriksen et al., 2010a, 2010b, 2011) came from the

224 same research project (see Henriksen, 2010). Using the inductive-deductive approach

225 seemingly worked as both framework confirming (deductive) and framework elaborating

226 (inductive). We found a consensus in the research that some areas of the working models,

227 particularly organisational culture, benefited from the philosophical assumptions of in-

228 terpretivism.

229   The subsequent seven studies all carried out thematic analysis (Aalberg & Sæther,

230 2016; Flatgård et al., 2020; Haukli et al., *Accepted*; Larsen et al., 2020; Mathorne et al.,

231 2020; Ryom et al., 2020; Seanor et al., 2017). They also represent a reversal of the anal-

232 ysis where findings were initially coded concerning the study objective and then grouped

233 into higher-order themes. Changes to the data-analysis approach could suggest that there

234 is less focus on introducing the HEA and rather on elaborating and providing more nu-

235 ances.

236 ***Validity***

237   All studies showed several validity measures, such as method triangulation by

238 using multiple data-collection strategies. The studies also show a change in validity

239 measures since some studies used inter-rater reliability and member-checking (Henriksen

240 et al., 2010a, 2010b, 2011), as evidenced by Henriksen (2010). Later studies (e.g.,

241 Mathorne et al., 2020; Seanor et al., 2017) indicate a switch to member reflection. One

242 possible explanation for the trend signposted in Mathorne et al. is the emergence of crit-

243 ical views of member-checking and inter-rater reliability, as explained by Smith and

244 McGannon (2018).

245 **Meta-Data-Analysis**

246 As a final step, we analysed the finding from all included articles against each

247 other. We completed a compare and contrast approach by breaking down the findings

248 from each study and looking for consensus and dissonance (Walsh & Downe, 2005). The

249 process also entailed interpreting how the classification of ATDEs as successful, unsuc-

250 cessful, or neutral influenced the findings. We grouped the findings from the included

251 research into a table showing how the findings related to the proposed success factors

252 from Henriksen and Stambulova (2017), see Table 3. Yet, Ryom et al. (2020) introduced

253 two additional features: Cultural Sensitivity and Sharing Knowledge. We argue below

254 that under a different approach to culture; then cultural sensitivity could be grouped with

255 organisational culture. Also, Sharing Knowledge is consistent as a positive feature in

256 studies in sailing and kayak (Henriksen et al., 2010a, 2011) and counter-argument to an

257 unsuccessful golf environment (Henriksen et al., 2014).

258 [*Please insert Table 3 around here*]

259 Our meta-data analysis indicated that studies classifying the ATDE as successful

260 tend to associate success with positive features (e.g., supportive relationships, coherent

261 culture). In contrast, not-so-good things might be marginalised or demoted, such as find-

262 ings in a successful ATDE (Henriksen et al., 2011) highlighted competing beliefs regard-

263 ing long term development and the apparent demotion of findings suggesting that the

264 same environment highlighted a desire to develop athletes from a younger age. In Hen-

265 riksen et al. (2010b), the inclusion of different skill levels is presented as a positive, and

266 yet, in Henriksen et al. (2014), inclusive training groups is viewed as a negative and 'too

267   inclusive.' We also found that Henriksen et al. (2010b) suggest that the coherent culture

268   in that specific ATDE came from the exclusion of people (i.e., coaches and parents) who

269   do not share the same beliefs. Further, Larsen et al. (2020) showed that a coherent culture

270   might come from a pervasive attempt from managers, coaches, and other stakeholders to

271   reinforce 'correct' ways to perceive, feel, and think. However, reinforcing 'correct' ways

272   of thinking might lead to potential issues such as groupthink (Mannion & Davies, 2016).

273   Research on cultural hegemony (Ray, 1986) also problematise attempts to decide what

274   correct or incorrect behaviours and highlight the potentially negative influence on persons

275   in such a context. Also, Haukli et al. (*Accepted*) found that the successful Stabæk football

276   academy had both shared features and conflict in the organisational culture. Altogether,

277   these findings suggest that researchers should view organisational cultures from both

278   shared and not shared features to not overlook potentially important findings.

279   Some features were presented differently across studies and might be positive in

280   one setting and negative in another. Henriksen et al. (2010a) suggest that peer

281   relationships can be challenging; Henriksen et al. (2011) propose that non-sport peers can

282   be a source of positive relief; yet, Henriksen et al. (2014) suggest that such challenge is a

283   clear negative feature. Furthermore, the exclusive focus on sport-specific skills found in

284   Henriksen et al. (2014) is also highlighted in several other studies (Aalberg & Sæther,

285   2016; Flatgård et al., 2020; Haukli et al., *Accepted*; Larsen et al., 2013, 2020). Six studies

286   (Aalberg & Sæther, 2016; Flatgård et al., 2020; Henriksen et al., 2010a, 2011, 2014;

287   Seanor et al., 2017) mention that the prospects are expected to be responsible for their

288   own psycho-social skill development, yet, provide no examples of support for this devel-

289   opment.

290   We found that a critical feature of the included studies on ATDEs is the combina-

291   tion of idiosyncratic features and that it might be hard to detach them from the environ-

292   ment. A feature of the meta-synthesis is to do so and re-analyse the findings against each

293   other. Altogether, our meta-data-analysis highlights that classifying an ATDE as success-

294   ful ahead of the data collection might provide a confirmation bias since our re-analysis

295   shows that some positive features might lead to negative outcomes and negative feature

296   might lead to positive outcomes.

297   **Meta-Synthesis and Future Directions**

298   The reviewed studies have revealed how the normative research discourse shape

299   the results regarding ATDEs. We will first discuss the strengths of the research before

300   looking at the possible weaknesses and how to move forward with HEA.

301   **Strengths of the Included Research**

302   Chamberlin (2011) suggests that too many qualitative researchers do not think

303   carefully and critically about how they use different methods. Yet, our meta-method

304   analysis indicates that the included studies showed robust rigour and connection between

305   the theory, method, and analytical strategy. A 'tight fit' remains critical as qualitative

306   research moves forward amidst methodological tensions (Whitley & Massey, 2018).

307   Culver et al. (2012) suggested that returning to the interviewees to gather more

308   data could be a step forward since it might allow the researcher to achieve more depth

309   and comprehensiveness. All studies used multiple data-collection strategies serve to in-

310   crease contextual depth in the research (Collins & Stockton, 2018). Further, Seanor et al.

311   (2017) reflect an approach where guided walks were coupled with subsequent interviews

312   and recorded reflections. Particularly the guided walks were described as influential in

313   prompting contextual depth. Increased sensitivity to epistemology might have influenced

314   the reflexive stance to how contextual depth is achieved (Costantino, 2008).

315   Moving forward with HEA might also benefit from unstructured, open-ended in-

316   terviews with grand tour questions (e.g., tell me about your life) (Culver, 2012), ethnog-

317   raphy (see Wagstaff, Fletcher, & Hanton, 2012), or arts-based methods (see Bagnoli,

318   2009; Fraser & Al Sayah, 2011). Using such approaches may be helpful to young people

319   since arts-based approaches can go beyond the verbal mode of thinking and help include

320   wider dimensions of experiences (Bagnoli, 2009). Future studies could also take an exis-

321   tential view of the experiences of being-in-the-world (May, 1983). Drawing on existential

322   thought could illuminate 'how' developing individuals emerge through their relationships

323   and actions towards the social and physical world (Richert, 2010).

324   **Opportunities for Refining the HEA**

325   *The use of Bronfenbrenner*

326   The meta-theory analysis included tracing the different theoretical underpinnings

327   and suggested that there might be room for refinement of the HEA. Tudge et al. (2016)

328   suggested that Bronfenbrenner's work can be subject to conflating uses. Not fully de-

329   scribing the theoretical foundations could limit the impact of the research and appropri-

330   ately testing or evaluating findings (Tudge et al., 2016). We found that Bronfenbrenner's

331   ecological theory (Bronfenbrenner, 1979) was used interchangeably with the bioecologi-

332   cal model (Bronfenbrenner, 2005). Yet, being influenced by the bioecological model

333   would entail being explicit about examining the 'engines of development' or proximal

334   processes and the Person-Process-Context-Time model (Bronfenbrenner, 2005) and po-

335   tentially focus more on the process element of the ESF model or longitudinal research.

336   Moving forward should involve considering the use of Bronfenbrenner's theory.

337   A book chapter authored by Henriksen and Stambulova (2017) serves to explain the HEA

338   and draws only on Bronfenbrenner's work from the 1970s. It might, thereby, show the

339   progression of clarifying the theoretical foundation. We suggest, however, that using the

340   underpinning features of the bioecological theory (Bronfenbrenner, 2005) is most in line

341   with the proposed definition: "the progressive mutual accommodation that takes place

342   between an aspiring athlete and a composite and dynamic sporting and non-sporting en-

343   vironment" (Henriksen & Stambulova, 2017, p. 272) since it is explicitly considering the

344   progressive mutual accommodation.

345   ***Organisational Culture***

346   Recent research (McDougall et al., 2019, 2020) and systematic reviews of organ-

347   isational culture (Maitland et al., 2015; Wagstaff & Burton-Wylie, 2018) question the use

348   of the integration perspective (i.e., emphasising congruency) on organisational culture. In

349   terms of the HEA, we suggest that researchers should examine who gets to determine

350   what 'correct' ways of thinking are, as described in Larsen et al. (2020) and Ryom et al.

351   (2020)? The integration approach to organisational culture has been subject to severe

352   critique across other research fields (e.g., anthropology, sociology, and management

353   studies) (McDougall et al., 2020). Here, Alvesson (2017) suggests that the integration

354   position represents a significant restriction because it only privileges what is shared and

355   consistent.

356   Realising that success and positive features might not go together questions

357   whether a coherent organisational culture is a fundamental feature of successful ATDEs.

358   One argument is that the integration perspective and the description of this feature mar-

359   ginalises what is not shared, which is also explained in Henriksen, Larsen, Christensen's

360   (2014) examination of 'the opposite pole.' Nonetheless, most studies covered Scandina-

361   vian contexts, which could induce a sense of imagined sameness. Agergaard and Søren-

362   sen (2010) explain that imagined sameness is central to Nordic self-understanding and is

363   a tendency to downplay differences. Our meta-data analysis showed several examples of

364   potentially competing beliefs and practices in the individual studies, which were not in-

365   cluded in the original analyses of organisational culture. One example was Henriksen et

366   al. (2010b), where participants from a Swedish track and field club reported inclusion and

367   room for everyone (i.e., athletes), and at the same time, they had rejected a group of

368   coaches and parents since their intentions were not coherent. Another example was Ryom

369   et al. (2020) which mentioned both elements of a top-down controlled culture and cultural

370   sensitivity aiming at being open to the cultural heritage of the players. With a differenti-

371   ated approach to studying culture, cultural sensitivity could be included under organisa-

372   tional culture.

373   One argument may be that these are separate features of distinct successful

374   ATDEs. However, McDoughall et al. (2020) explain that an over-adherence to shared

375   elements of culture might mean downplaying ambiguous sources of culture. Mountjoy

376   (2019) exemplified this and describes how abuse might manifest in cultures that denies

377   or ignores non-shared features of culture. It might, therefore, be worthwhile considering

378   the underpinning understanding of organisational culture because the integration perspec-

379   tive might add to a false sense of unity (McDougall et al., 2020).

380   Moving forward with organisational culture as a key feature in the ESF model

381   might benefit from changing the underpinning theory and assumptions of integration. In

382   its current form, the ESF model might not be flexible enough to examine other areas of

383   the ATDE as exemplified considering the philosophy of collaboration in Mathorne et al.

384   (2020). Avoiding looking for only shared features might further the efforts to be more

385   neutral and open in the inquiry. Also, recent research suggests taking a sceptical approach

386   to cultures that appear homogenous and uniformly understood (McDougall et al., 2020).

387   Researchers working from the HEA could follow up growing empirical evidence sup-

388   porting that ambiguity is endemic in sports organisations (Gibson & Groom, 2018). To

389   do so, Meyerson and Martin (1987) present two other approaches to study culture: the

390   differentiation paradigm (i.e., emphasising diversity) and the ambiguity paradigm (i.e.,

391   accepting perpetual ambiguity). Alvesson (2017) mentions that continuing onwards with

392   an integration perspective risks categorical thinking and false positives (and negatives).

393   *Sampling in future HEA Studies*

394   Coupling positive features to the status of being a successful ATDE might give a

395   skewed sense of coherence. Instead, it might be worthwhile recognising that success, in

396   terms of medals and developing elite athletes, might not go together with positive devel-

397   opmental features, and vice versa. We believe that exploring open and neutral cases is an

398   important next step rather than contrasting good with the opposite pole. Two studies in

399   the current synthesis (Aalberg & Sæther, 2016; Flatgård et al., 2020) refrained from pass-

400   ing judgement on the successful or unsuccessful nature of the ATDEs. Instead, Aalberg

401   and Sæther (2016) considered that it might be a coincidence that some environments are

402   successful. These two studies opted for open and more neutral descriptions of what is

403   going on in the ATDE. Doing so might eliminate confirmation biases emerging from

404   categorising an ATDE as un/successful ahead of the research. We acknowledge that it is

405   not possible to include all populations in talent development research. However, the

406   recognition that underrepresentation of outliers, neutral or negative cases, alert us to po-

407   tential benefits by purposefully including outliers to ensure more nuances.

408   *Practical Implications of (Un)Successful ATDEs*

409   Refining the HEA and ATDEs might help provide a more well-researched foun-

410   dation for classifying ATDEs for those working in sports. Our meta-data analysis also

411   showed that both negative and positive features of success might be present in all ATDEs

412   (e.g., inclusion, testing, early intensifying in sport; Table 3). We, therefore, suggest that

413   the current definition of successful ATDEs could benefit from a more holistic view of

414   success. The consensus statement on improving the mental health of high-performance

415   athletes (cf. Henriksen et al., 2019) suggested that some environments can nourish or

416   malnourish mental health. Including thriving or flourishing could, therefore, be a wel-

417   come next step. In our review, all the included successful ATDEs viewed success from

418   the vantage points of a history of producing successful senior elite athletes, and yet, only

419   1% might ever make it to elite sports (Relvas et al., 2010). Furthermore, recent revelations

420   of misconduct in sport such as swimming in Denmark (Kammeradvokaten, 2020) details

421   abusive behaviours of youth athletes as young as fifteen-year-olds. Such findings suggest

422   that even successful environments could also malnourish athlete mental health. Or that

423   despite being successful in terms of medal count or producing elite athletes, environments

424   can be highly unsuccessful in terms of safeguarding young people's mental health and

425   broader development.

426   The contrasts suggest that it might be timely to rethink the definition of successful

427   ATDEs. Findings from Ryom et al. (2020) propose that safety, or what we interpret as

428   psychological safety (Edmondson, 1999), is a key feature since it allows developing ath-

429   letes to take risks and facilitate learning. One issue might be linking success to positive

430   features. Instead of predetermining the success of an ATDE, researchers could go for the

431   open and neutral. We suggest detaching the definition from the potential effect to explain

432   how the different features and elements of the ATDE and ESF models combine to form

433   an environment which optimises learning. Also, contrasting the successful with obviously

434   less successful might confound negative features with successful ones due to the prede-

435   termined success of an ATDE. Instead, it might be worthwhile to revisit the notion of

436   'stabile' environments (Araújo & Davids, 2009) or environments optimising develop-

437   ment (Bronfenbrenner, 2005).

Concluding remarks and limitations

Our qualitative meta-synthesis aimed to provide a critical review of the theoretical and methodological trends in research using the HEA in talent development to provide suggestions for future research. A limitation to our meta-study is that it requires more abstraction and limits considering idiosyncratic features. The findings showed that the studies featured robust methods fitting the approach. Yet, there is some ambiguity and room for refinement in the underpinning theory. That is, considering the use of Bronfenbrenner and the theory underpinning organisational culture could help develop the HEA and allow better testing of the approach. It is increasingly important to have these considerations since the HEA now underpins Dual Career Development Environment research (Henriksen et al., 2020), talent identification research (Reeves & Roberts, 2020), and community research (Balish & Côté, 2014). Also, considering the way we classify successful environments might need a rethink. As we have explained, we found competing findings in all studies, and a successful ATDE might not equal positive features, and positive features might not equal a successful ATDE. Instead, we suggest thinking of successful ATDEs as more advantageous or as optimising development.

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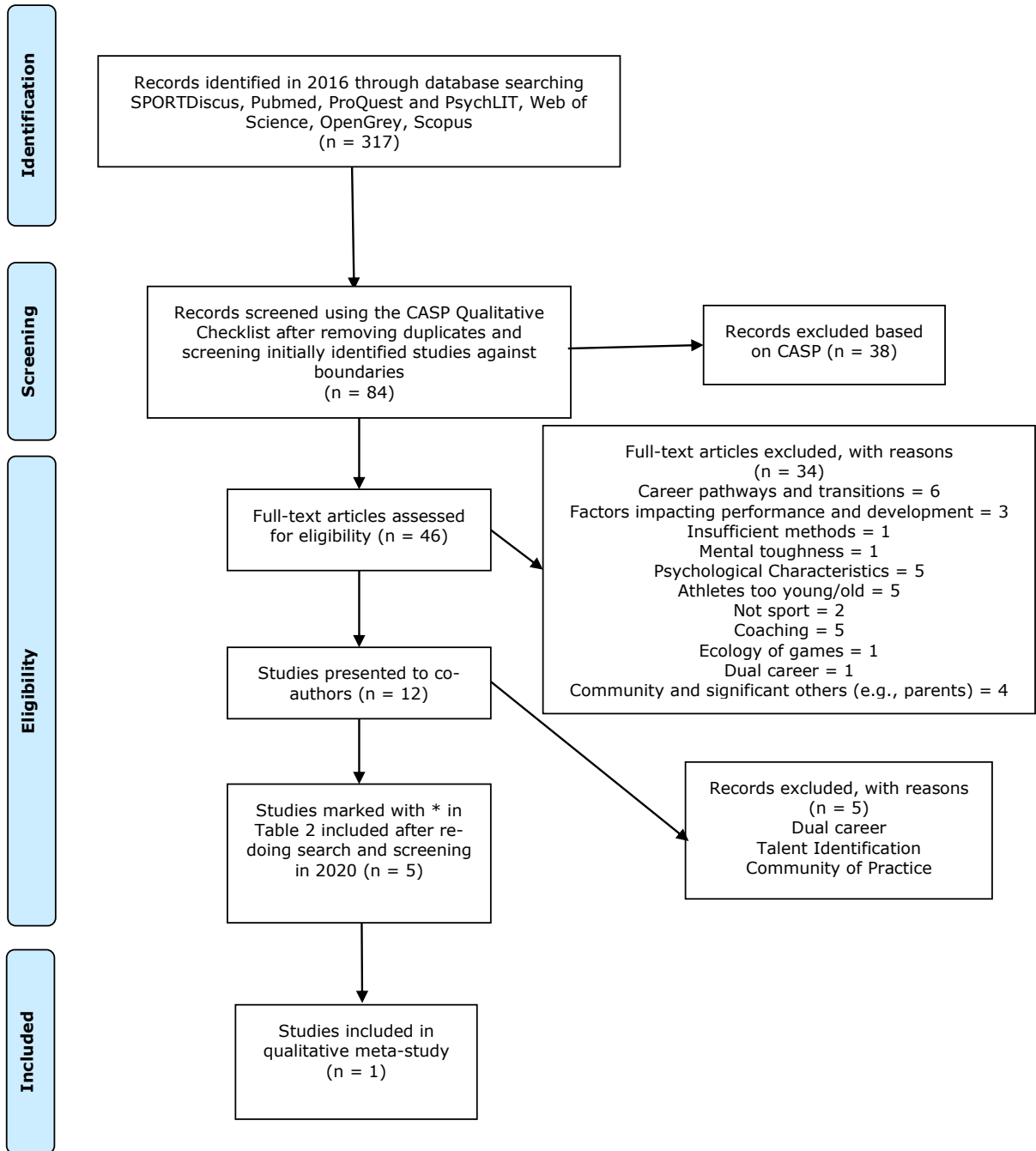653   *eclectic practice.* http://psycnet.apa.org/record/2010-20578-000

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704 Figure 1.

705 PRISMA Flow Diagram of Search and Inclusion Procedure

706

Identification

Records identified in 2016 through database searching SPORTDiscus, Pubmed, ProQuest and PsychLIT, Web of Science, OpenGrey, Scopus
(n = 317)

Screening

Records screened using the CASP Qualitative Checklist after removing duplicates and screening initially identified studies against boundaries
(n = 84)

Records excluded based on CASP (n = 38)

Eligibility

Full-text articles assessed for eligibility (n = 46)

Full-text articles excluded, with reasons
(n = 34)
Career pathways and transitions = 6
Factors impacting performance and development = 3
Insufficient methods = 1
Mental toughness = 1
Psychological Characteristics = 5
Athletes too young/old = 5
Not sport = 2
Coaching = 5
Ecology of games = 1
Dual career = 1
Community and significant others (e.g., parents) = 4

Studies presented to co-authors (n = 12)

Records excluded, with reasons
(n = 5)
Dual career
Talent Identification
Community of Practice

Studies marked with * in Table 2 included after re-doing search and screening in 2020 (n = 5)

Included

Studies included in qualitative meta-study
(n = 1)

707

708

709   Table 1

710   *Search Criteria*

Criteria	The approach adopted for this review
Comprehensive review	English Language journal articles of databases: SPORTDiscus, Pubmed, ProQuest and PsychLIT, Web of Science, Open-Grey, Scopus
Topic	The Holistic Ecological Approach in Talent Development Environments and Contexts
Boundaries defined	Full-length peer-reviewed articles and primary literature
	Title, abstract or keywords include the topic
Exclusion Criteria	Non-English articles
	Senior elite and senior professional sports, physical education, fitness, recreational sports
	Must use ATDE and/or ESF model
	Dual Career Research
	Quantitative or mixed-methods articles
	Experiences of athletes younger than 13 and older than 21
Period studied	2010 – 2021
Keywords	Talent OR sport* OR performance OR youth OR elite OR adolescent OR young AND environment OR context OR setting AND talent development OR talent development in sport

711

712

713 Table 2

714 *Meta-theory and meta-method extraction*

Author(s)	Journal	Methods of analysis	Type(s) of data	Country researched	Sport(s) researched	Validity
Aalberg, R. R. And Sæther, S. A., (2016)	Sport Science Review	Thematic content analysis	Observations, Interviews and Focus group	Norway	Football	Member checking, methodological triangulation
Flatgård, G., Larsen, C. H., and Sæther, S. A. (2020)*	Scandinavian Journal of Sport and Exercise Psychology	Deductive coding based on HEA	Observations and semi-structured interviews	Norway	Football	Method triangulation
Haukli J. S., Larsen, C. H., Feddersen, N. B., and Sæther, S. A. (*Accepted*)*	Current Issues in Sport Science	Thematic content analysis (Braun et al., 2016)	Semi-structured interviews, focus group interview, observations, analysis of documents	Norway	Football	Tracy (2010): credibility, meaningful coherence. Peer validity and triangulation of data collection strategies
Henriksen, K., Larsen, C. H., and Christensen, M. K., (2014)	International Journal of Sport & Exercise Psychology	Inductive-deductive meaning condensation	Participant observation, semi-structured interviews, analysis of documents	Denmark	Golf	Member checking, methodological triangulation
Henriksen, K., Stambulova, N. and Roessler, K., K., (2010)	Psychology of Sport & Exercise	Inductive-deductive meaning condensation	Participant observation, semi-structured interviews, analysis of documents	Denmark	Sailing	Researcher triangulation and member checking, methodological triangulation
Henriksen, K., Stambulova, N. and Roesler, K. K., (2010b)	Scandinavian Journal of Medicine & Science in Sports	Inductive-deductive meaning condensation	Participant observation, semi-structured interviews, analysis of documents	Sweden	Track and Field	Researcher triangulation and member checking, methodological triangulation
Henriksen, K., Stambulova, N. and Roessler, K. K., (2011)	The Sport Psychologist	Inductive-deductive meaning condensation	Participant observation, semi-structured interviews, analysis of documents	Norway	Kayak	Researcher triangulation and member checking, methodological triangulation
Larsen, C. H., Alfermann, D., Henriksen, K., and Christensen, M. K., (2013)	Sport, Exercise and Performance Psychology	Abductive	Participant observation, semi-structured interviews, analysis of documents	Denmark	Football	Member reflection, researcher triangulation, thick descriptions, methodological triangulation

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Author(s)	Journal	Methods of analysis	Type(s) of data	Country researched	Sport(s) researched	Validity
Larsen, C. H., Storm, L. K., Sæther, S. A., Pyrdol N. & Henriksen, K., (2020)*	Scandinavian Journal of Sport and Exercise Psychology	Thematic analysis	Semi-structured interviews, participant observation and analysis of documents	Netherlands	Football	Bracketing hypothesis and expectations, critical friends, member reflections, and triangulation of data collection strategies.
Mathorne, O. W., Henriksen, K., and Stambuova, N. (2020)*	Case studies in Sport and Exercise Psychology	Deductive, thematic content analysis	Semi-structured interviews and analysis of documents	Denmark	Swimming	Member reflection and methodological triangulation
Ryom, K., Ravn, M., Düring, R., and Henriksen, K. (2020)*	International Sport Coaching Journal	Thematic analysis	Semi-structured interviews, observations, desk research	Belgium	Football	Method triangulation
Seanor, M., Schinke, R., Stambulova, N., Ross, D., and Kpazai, G. (2017)	Journal of Sport Psychology in Action	Inductive (Braun and Clarke, 2013), deductive based on the Environment Success Factors Model	Guided walk interviews, interview, analysis of documents, and recorded reflections	Canada	Gymnastics	Member reflection and methodological triangulation

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717   Table 3

718   *Meta-data-analysis of success factors proposed in Henriksen and Stambulova (2017) and classification of*

719   *ATDE by the original authors*

	(Aalberg & Sæther, 2016)	(Flatgård et al., 2020)	(Haukli et al., 2021)	(Henriksen et al., 2010a)
Classification of ATDE and case-selection determinants of being successful, neutral, or unsuccessful	Neutral	Neutral	Successful	Successful
	Successful in winning at the youth level, yet, weak relationship with the senior team	New environment with the slogan: 'we realise dreams'; no classification as un/successful	Marker of success was developing players for the senior elite team (n=6) and most players in the youth national team (n=15) and won U16 and U19 national league	Successful record of producing elite senior athletes, with a large proportion of the pre-elite group managing a successful transition to the senior elite level (p. 214)
Training groups with supportive relationships	Close knit group of players and close relationship with U16	Social, close-knit group of players	Supportive coach-athlete relationships and supportive intra-athlete group relationships. Yet, coach-athlete relationships sometimes suffered due to harsh criticism from coaches	Younger athletes engage in apprenticeship under senior elite athletes

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	(Aalberg & Sæther, 2016)	(Flatgård et al., 2020)	(Haukli et al., 2021)	(Henriksen et al., 2010a)
Proximal role models	Few role models in the environment Top-6 group, players closest to senior level	Few role models in the environment. Believe in 'playing up'	No access to elite senior players as role models	Role models form the 'spine' of the program; prospects also teach younger athletes
Support of sporting goals from the wider environment	Impatient sports community; increasing support for school opportunities	Challenges with peers. Highlight the importance of parental support.	Strategy of keeping family to minimise family interactions. Yet, some fathers getting into discussions with coaches over playing time and team selections	Negotiating peer relationships can be challenging due to vast time commitments. Parental involvement is unwanted
Support for the development of psychological skills	Focus on the players accountability for their own development	Focus on the players responsibility for their own development, supporting coaches	'Airplane mechanic' approach (i.e., negative centred focus on mistakes) and little explicit support for psychological development	Youth athletes do not have access to experts, yet, elite athletes share knowledge openly

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	(Aalberg & Sæther, 2016)	(Flatgård et al., 2020)	(Haukli et al., 2021)	(Henriksen et al., 2010a)
Training that allows for diversification	None	Few	Early recruitment and specialisation in football (U7) considered necessary to be competitive and get potential elite players before competing clubs	*Not mentioned*
Focus on long-term development	Development before results	Development before results	Espoused focus on long-term development	Athletic achievements are considered less important than developing athletic skills and psychosocial competencies

	(Aalberg & Sæther, 2016)	(Flatgård et al., 2020)	(Haukli et al., 2021)	(Henriksen et al., 2010a)
Strong and coherent organizational culture	Long history of success at senior level, clear playing philosophy	Joint community, passion, development focus, openness, humility	Both shared features and ambiguous features. Conflict between organisational culture (early specialisation) and national culture (children's rights laws requiring late specialisation)	Assumed coherence between values, assumptions, and behaviours carried out by individuals in the environment
Integration of efforts	Close school collaboration, transport to school, coach employee both at school and club	Volunteers, no collaboration with school	Some players attended a sports upper-secondary school, which helped manage training load. Other players who did not attend such a school struggled at times	Federation and Team Danmark as key organisations in supporting dual career with little support from educational institutions.

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722   Table 3 (continued)

723   *Meta-data-analysis of success factors proposed in Henriksen and Stambulova (2017) and classification of*

724   *ATDE by the original authors (continued)*

	(Henriksen et al., 2010b)	(Henriksen et al., 2011)	(Henriksen et al., 2014)	(Larsen et al., 2013)
Classification of ATDE and case-selection determinants of being successful, neutral, or unsuccessful	Successful 'IFK Växjö was selected for the study because it has a successful record of producing elite senior athletes.' (p. 124)	Successful '… success in developing young paddlers into elite senior athletes. Indicators of this success are the impressive results of Norwegian senior elite kayakers and the flow of young Wang paddlers into the Norwegian senior national team.' (p. 345)	Unsuccessful First, it has the explicit goal of developing young golfers into elite senior athletes. Second, it lacks success in reaching this goal (p. 137)	Successful Selected because it was: 'one of the oldest and most successful Danish soccer clubs' (p. 4)
Training groups with supportive relationships	Prospects share both sporting and friend relationships in training groups; groups include athletes of different skill levels	Wish to be an inclusive club; competitive training sessions	Inclusive training group with 'room for everybody' approach; individualised training programmes at an early stage; low cohesion in the group; lack of knowledge sharing	Supportive relationships; friendships within and across age groups

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	(Henriksen et al., 2010b)	(Henriksen et al., 2011)	(Henriksen et al., 2014)	(Larsen et al., 2013)
Proximal role models	Prospects train besides elite athletes; elite athletes deliver talks on 'club feeling' and invite other elite athletes to train; prospects act as role models to younger athletes	Prospects 'ride the wave' of elite athletes; learning by 'osmosis'; the central feature of the environment is the relationship between the prospects and former and current elite athletes	Airtight boundaries between athletes at different levels. Elite-level athletes keep their secrets and regard prospects as future rivals	No proximal elite player role models; informal relationships between groups of prospects
Support of sporting goals from the wider environment	Families provide emotional, practical, and financial support for prospects; expectation that all families contribute to the club	Parental support and former elite athlete parents 'nourish an elite mentality'; opportunity to discuss training with peers from other sports; unwind with peers outside sport	Non-sport environment shows lack of understanding; teachers prioritise home assignments; friends often invite to parties	Peers, parents, and teachers acknowledge and accept players' dedication

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	(Henriksen et al., 2010b)	(Henriksen et al., 2011)	(Henriksen et al., 2014)	(Larsen et al., 2013)
Support for the development of psychological skills	Prospects are expected to develop responsibility for own training; every day is an opportunity for personal development	Norway's elite sports organisation experts visit the environment to give talks, yet, prospects do not use the expert in a structured way	No agreement on what skills and competences are important. Athletes learn that autonomy includes the right not to take responsibility for own development	Holistic development of players; promoting psychosocial skills; develop prospects as people
Training that allows for diversification	Late specialisation underpinning diversification in training	Prospects participate in 'basis training' of balance, strength, flexibility; prospects participate in winter sports	Promoting early specialisation; focus solely on developing sport-specific skills; considering athletes' interest in trying different sports to be rivalry and a potential threat	Early specialisation; exclusive focus on sport specific skills; 'football education'

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	(Henriksen et al., 2010b)	(Henriksen et al., 2011)	(Henriksen et al., 2014)	(Larsen et al., 2013)
Focus on long-term development	Long-term development is more important than sporting results	Prospects specialise late; participate in swimming and winter sports; competing basic belief in developing athletes in an uncompromising way from a younger age	Constant measuring of the athletes' current performance level in terms of their "handicap"	Focus on balance between results and development
Strong and coherent organizational culture	Clear demand that athletes abide by the club's philosophy as feature for creating coherence	Proposed cohesive culture; competing assumptions of late specialisation and a desire to develop athletes from a young age, competing assumption of being inclusive and competitive	Fragmented culture in which espoused values do not correspond with actions; uncertainty and confusion among coaches, athletes and others; lack of common vision	Appearance of cohesive culture; family feeling underpinning cohesion
Integration of efforts	Schools in the area offer opportunities for prospects to train during school hours; coaches coordinate with schools	Close collaboration between Wang Elite sports school and Strand Kayak Club; strong relationship with other clubs through 'Kayak-Norway'	Lack of communication; conflicting interests; athletes experience many and conflicting pulls in daily life	Coordination between school and club handled by coach; teachers adjust homework to accommodate sport

727 Table 3 (Continued)

728 *Meta-data-analysis of success factors proposed in Henriksen and Stambulova (2017) and classification of*

729 *ATDE by the original authors (continued)*

	(Larsen et al., 2020)	(Mathorne et al., 2020)	(Ryom et al., 2020)	(Seanor et al., 2017)
Classification of ATDE and case-selection determinants of being successful, neutral, or unsuccessful	Successful	Successful	Successful	Successful
	Selected because of the Ajax academy's status as one of the most successful in the world (p. 35)	The collaboration between a local club, the municipality, and the Danish Swimming Federation was selected because of its successful record in producing successful senior athletes at the international level. (p. 14)	… successful record of accomplishment in producing senior elite football players (p. 3)	Develops athletes from entry to Olympic podium; producing four Olympic athletes earning all of Canada's Olympic medals
Training groups with supportive relationships	Highly competitive environment. Clubhouse as a community	*Not mentioned*	Peer feedback within training groups and an espoused focus on creating a 'safe' learning environment	'Star makers' help future elite athletes develop through tacit relationships

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	(Larsen et al., 2020)	(Mathorne et al., 2020)	(Ryom et al., 2020)	(Seanor et al., 2017)
Proximal role models	Little interaction with senior elite players. Opportunity to interact daily with older youth players.	*Not mentioned*	No opportunity for interaction with senior elite players. Yet, mixing age groups once a week allowed older academy players to practice with younger players	Senior athletes model habits and skills.
Support of sporting goals from the wider environment	Players can stay with foster families if they come from afar. Large network of clubs supporting recruitment for Ajax	Municipal support for developing in sport including joint initiatives with local club	Strong community support and interest. Coaches and club try to limit the influence of pressure.	*Not mentioned*

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	(Larsen et al., 2020)	(Mathorne et al., 2020)	(Ryom et al., 2020)	(Seanor et al., 2017)
Support for the development of psychological skills	Ajax 'took care of every need' (p. 37) suggesting little autonomy or opportunity to develop responsibility for own development. Focus on developing social skills	*Not mentioned*	Competing findings: player's needs are handled by the club, suggesting little opportunity to develop responsibility for their own development. Also, an explicit focus on holistic development of skills to help them in their daily lives (e.g., making decisions on their own in football specific drills)	Athletes must seek outside support.
Training that allows for diversification	Early specialisation in football.	Goal of being the best 'Dry-land' training club; establishing collaborations with a track and field club and a gymnastics club	No training allowing for diversification	Incorporating athlete-led games into training

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	(Larsen et al., 2020)	(Mathorne et al., 2020)	(Ryom et al., 2020)	(Seanor et al., 2017)
Focus on long-term development	Espoused focus on developing players to the first team, also emphasis on learning 'how to win' (p. 39)	Espoused focus on long-term development from leaders	Visible path for players to follow to first team supporting a focus on age-appropriate training. Consistent focus on performance rather than results. Players encouraged to take risks	'Slow and steady' athletes make own choice to intensify after age 15
Strong and coherent organizational culture	Managers, coaches, and other stakeholders constantly reinforce that there is a 'correct' way to perceive, feel, think. Consistent with Schein's (2010) view of top-down control of culture	Shared philosophy underpinning collaboration	Indication of a top-down controlled culture where players who do not comply with rules are benched and later released from the academy. Cultural sensitivity to players' cultural heritage acknowledging multiple cultures to blend multiple cultures	'Catch the feeling of flying' integrates the stories of Skyriders, values, and assumptions

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	(Larsen et al., 2020)	(Mathorne et al., 2020)	(Ryom et al., 2020)	(Seanor et al., 2017)
Integration of efforts	Players are picked up from school and Ajax employ part-time teachers to make up for lost lessons in school.	Collaboration between club, federation, and municipality; informal relationships as catalyst for positive formal integration of efforts	Collaboration with local school, and an espoused focus on schooling over sport due to the small percentage of players who transition to the senior elite level.	*Not mentioned*

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