JoE

Introduction to the Special Issue on Proceedings of the Inaugural Conference of the TIDES Society

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

From the Editors of the *Journal of Expertise*

Zach Hambrick[1] and Guillermo Campitelli[2]

[1]Department of Psychology, Michigan State University, USA
[2]College of Health and Education, Murdoch University, Australia

In this special issue of the journal, we are delighted to provide a venue for publication of abstracts presented at the inaugural conference of the Talent Identification and Development Environments in Sport (TIDES) Society, held at Leeds Beckett University in June 2026. We are grateful to Matthew Reeves, Tom Mitchell, Kevin Till, and James Dugdale for allowing us to publish this work, which illustrates both the breadth of contemporary talent-development research and a growing recognition that expertise cannot be understood through individual characteristics alone.

From the Guest Editors

Matthew J. Reeves[1], Tom Mitchell[2], Kevin Till[2], and James H. Dugdale[3]

[1]Centre for Applied Sport, Physical Activity, and Sport, University of Lancashire, UK
[2]Carnegie School of Sport, Leeds Beckett University, UK
[3]School of Applied Sciences, Edinburgh Napier University, UK

TIDES was founded in 2024 to bring together those who conduct research and work in the identification and development of talent in sports. Hosting an international conference, alongside a postgraduate researcher event, within three years of its founding was a remarkable achievement for the society, and we are grateful to the *Journal of Expertise* to share some of the work presented at the conference. For publication, abstracts have been organized under the thematic headings for the conference session during which each one was presented. The last section includes the work selected for presentation during the Young Investigator Award session.

We hope this collection of abstracts offers readers a useful snapshot of current research as well as a sense of the questions that will shape the next generation of scholarship on talent identification and development in sport. For example, contributors consider how talent and potential should be conceptualized, how development environments can be assessed and improved, and how psychological, psychosocial, and health considerations shape athletes' experiences. Others examine the judgments involved in selection and deselection, including the roles of scouts and coaches; the organizational structures and ecosystems within which development occurs; and the varied pathways and transitions through which athletes progress toward, or away from, elite levels.

Several abstracts confront persistent challenges for talent-development systems, particularly the biases and inequalities associated with biological maturation, relative age, sex, and access to participation, while others propose new approaches to assessment, analytics, decision-making, learning

environments, and practice design. The collection spans numerous sports and national contexts, and its methods range from systematic reviews and longitudinal analyses to qualitative inquiry, observational research, and applied work conducted within sporting organizations.

Taken together, these contributions reinforce a theme that runs through research on expertise more generally: Development is dynamic, multidimensional, and deeply dependent on context. Identifying promising performers is only one part of the problem. Equally important is understanding the environments that enable people to develop, the decisions that shape their opportunities, and the systems that support or constrain their progress.

Guest Editors' Acknowledgements

We would be remiss not to acknowledge the contributions of conference participants whose work does not appear in abstract form in this publication. Professor Kevin Till and Drs. Tom Mitchell and Ffion Thompson delivered the host plenary, drawing on their combined work on holistic talent development. Four parallel sessions across the two days then demonstrated the breadth and depth of current work. Professor Ruud den Hartigh and Dr. James Dugdale addressed critical issues in predicting and developing sporting talent. Drs. Fieke Rongen, Ffion Thompson, Milla Saarinen, and Koen de Brandt offered insights from across Europe on sports schools as talent development environments. Dr. Katie Johnston and Professor Nick Wattie explored the challenges and opportunities of evaluating those who evaluate talented athletes, and Professor Russell Martindale brought together researchers who have adopted and adapted the Talent Development Environment Questionnaire (TDEQ) across countries and contexts. A practitioner panel of Drs. Jamie Taylor, Alex Roberts, and Andy Drake, and John Lind explored what practitioners need, notice, and navigate in their daily work. Each day closed with a keynote. On day one, Drs. Nic Bullock and Adeline Green of the Australian Institute of Sport presented a system-wide perspective on talent identification and development in the buildup to Australia's home Games in 2032; and on day two, Professor Joe Baker of the University of Toronto examined the challenges facing an evidence-based system of talent identification. Both sessions offered research and applied insights that kept the rooms full until the very end.

Rubrics on the Pitch: Exploring the Reliability of Soccer Scouts' Assessments

Ilse P. Peringa[1], Sebastiaan W. Platvoet[2], Rob R. Meijer[1], A. Susan M. Niessen[1], and Ruud J. R. den Hartigh[1]

[1]Department of Psychology, University of Groningen, the Netherlands
[2]School of Sport and Exercise Studies, HAN University of Applied Sciences, the Netherlands

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
assessment, reliability, scouting, talent identification

Background
Recent studies demonstrate low inter-rater reliability among talent scouts' evaluations of athletes (e.g., Lüdin et al., 2023). Drawing on selection psychology, structured assessment tools, such as rubrics, and actuarial combination methods (i.e., predefined rules for combining ratings) are proposed to improve reliability compared to unstructured, clinically combined judgments (i.e., combining ratings in one's mind) (Huffcutt et al., 2013; Kuncel et al., 2013). However, empirical evidence on the reliability of such approaches in scouting remains limited.

Aim
The aim of this study was to explore the inter-rater reliability of scouts' current and potential performance assessments during an 11v11 live match using a rubric and assess possible differences between actuarial and clinical combinations methods.

Methods
Sixteen male scouts from a single professional academy (*M* age = 55 years, experience = 6 years) each evaluated three to four under-13 players (23 total). Scouts rated seven indicators of current and potential performance: motoric/physical, technical execution, attacking on the ball, attacking positioning, defensive duels, defensive positioning, and transitioning – stemming from the academy's standard rubric. Overall performance scores were derived via (a) clinical combination (scouts' judgments) and (b) actuarial combination (mean of the seven indicator ratings).

Results
Inter-rater reliability was moderate for overall current performance (ICC = .61 clinical, ICC = .61 actuarial), but poor for overall potential performance (ICC = .37 clinical, ICC = .42 actuarial). Clinical versus actuarial combination made little difference in reliability. Scouts reported similar confidence assessing potential, but greater difficulty compared to current performance.

Conclusion
Assessments of potential appear particularly unreliable, even with rubrics, highlighting the need to research and improve reliability in talent identification.

References

Huffcutt, A. I., Culbertson, S. S., & Weyhrauch, W. S. (2013). Employment interview reliability: New meta-analytic estimates by structure and format. *International Journal of Selection and Assessment, 21*(3), 264–276. 0965-075X https://doi.org/10.1111/ijsa.12036

Kuncel, N. R., Klieger, D. M., Connelly, B. S., & Ones, D. S. (2013). Mechanical versus clinical data combination in selection and admissions decisions: A meta-analysis. *Journal of Applied Psychology, 98*(6), 1060–1072. https://doi.org/10.1037/a0034156

Lüdin, D., Donath, L., & Romann, M. (2023). Disagreement between talent scouts: Implications for improved talent assessment in youth football. *Journal of Sports Sciences*, *41*(8), 758–765. https://doi.org/10.1080/02640414.2023.2239614

JoE

A Vision on Talent: Exploring Gaze Behaviour in Football Coaches and Scouts

Laurens Gilson[1], Steven Verstockt[1,2], Frederik J. A. Deconinck[1], Matthieu Lenoir[1], and Maarten Slembrouck[1,2]

[1]Department of Movement and Sports Sciences, Ghent University, Belgium
[2]IDLab, Ghent University, Belgium

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
talent selection, visual perception, soccer

Background
Coaches and scouts are crucial in football talent identification (TID) across all levels. While literature indicates that assessors consider different skill domains (Larkin & O'Connor, 2017; Fuhre et al., 2022), little is known about how these evaluations are formed in practice. Given that TID largely relies on visual observation, examining gaze behaviour could offer a direct window into how coaches and scouts gather and process information when evaluating players. This is particularly relevant, as subjective evaluations are prone to bias and inconsistency (Bergkamp et al., 2019), suggesting that understanding the underlying perceptual mechanisms may help improve the reliability and transparency of talent identification processes.

Aim
This study aims to enhance knowledge of TID processes by exploring the gaze patterns of coaches and scouts during a TID task.

Methods
Gaze patterns of 69 football coaches and scouts (56 male, 13 female) were examined using the Pupil Invisible eye-tracking technology during football-specific TID tasks. Participants viewed videos of four 11-a-side matches (duration: 5–10 min each) featuring U14 players previously identified as talented and were asked to select and rank the three players with the highest potential after each video. Gaze data were recorded using Pupil Invisible eye-tracking glasses (200 Hz) and subsequently mapped onto the original video and a virtual top-down pitch representation, allowing for the integration of gaze location and ball position over time. Participants were categorised by coaching qualifications (≥ UEFA A; UEFA B; ≤ UEFA C) and coaching experience (≥ 10; 3–9; 0–2 years). Analyses included generic eye-tracking metrics (total fixations, fixation duration), as well as task-specific metrics such as mean gaze distance to the ball, dwell time per player, and transitions between predefined areas of interest (AOIs: active, near-active, passive), differentiated across build-up and attacking phases. Group differences were assessed using parametric and non-parametric tests depending on data distribution.

Results
Across scouts, 47–53% converged on the same three players, indicating a relatively high level of agreement. No significant differences were found in fixation count (#/sec) or duration (ms) between scouts with different levels of qualifications or years of experience ($p \geq .05$). However, distance to the ball varied as a function of qualification and experience. Scouts with more expertise and experience fixated further away from the ball during build-up phases. More qualified and more experienced scouts

also showed fewer transitions between AOI compared to lower expertise and experience groups, who allocated more time to the (near-) active zone. Across all groups, build-up phases elicited more visual transitions than attack phases.

Conclusion

Overall agreement in top-3 player selections and generic gaze metrics were not influenced by experience or qualifications, but groups differed in visual focus, suggesting similar choices can arise from different visual search strategies. These findings suggest that expertise and experience in TID are better captured in how information is gathered and processed—particularly through task-specific measures—than in the final decisions, with implications for improving scouting practices.

References

Larkin, P., & O'Connor, D. (2017). Talent identification and recruitment in youth soccer: Recruiter's perceptions of the key attributes for player recruitment. *PloS one, 12*(4), e0175716. https://doi.org/10.1371/journal.pone.0175716

Fuhre, J., Øygard, A., & Sæther, S. A. (2022). Coaches' criteria for talent identification of youth male soccer players. *Sports* (Basel, Switzerland), *10*(2), 14. https://doi.org/10.3390/sports10020014

Bergkamp, T. L. G., Niessen, A. S. M., den Hartigh, R. J. R., Frencken, W. G. P., & Meijer, R. R. (2019). Methodological issues in soccer talent identification research. *Sports Medicine* (Auckland, N.Z.), *49*(9), 1317–1335. https://doi.org/10.1007/s40279-019-01113-w

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

The Mental Health of Academy Football Players Facing Release

Chris Saward, Tom McGlinchey, Laura Healy, Mustafa Sarkar

Sport, Health and Performance Enhancement (SHAPE) Research Centre, Department of Sport Science, Nottingham Trent University, UK

Keywords
deselection, latent profile analysis, person-centered, soccer, transitions

Background
Release from a professional football academy is the termination of a player's contract and playing status with that club. Release may adversely affect young players' mental health.

Aim
The present study examined the mental health of male academy footballers aged 12-21 years facing release from professional football academies in England.

Methods
Two hundred and sixty-three academy footballers aged 12-21 years completed an 80-item survey on their athletic identity, resilience, social support, coping, psychological distress, and wellbeing.

Results
A latent profile analysis revealed four distinct profiles. Profile 1, labelled 'Average Profile', contained 47% released and 53% retained players and had average levels of all variables and average levels of wellbeing and distress compared to the other profiles. Profile 2, labelled 'High Coping, Low Resilience, Below Average Support', contained 80% released and 20% retained players and had high levels of problem-focused coping, very high levels of emotion-focused and avoidance coping, below average perceived available social support, low resilience, and had lower wellbeing and higher distress than other profiles. Profile 3, labelled 'Low Coping', contained 12% released and 88% retained players and had very low levels of problem-focused coping and low levels of emotion-focused and avoidance coping, and had higher wellbeing and lower distress than other profiles. Profile 4, labelled 'High Coping, High Resilience, Above Average Support', contained 65% released and 35% retained players and had very high levels of problem-focused and emotion-focused coping, above average avoidance coping, above average perceived available social support, and high levels of resilience, and had higher wellbeing than Profile 2.

Conclusion
Distinct profiles of athletic identity, resilience, social support, and coping exist among academy players facing release, with some groups of players at higher risk of poorer mental health. It is recommended that academies identify those players at risk of poor mental health when facing release and offer support accordingly.

IQ in team sports: Towards a Definition, Understanding, and Accompanying Coaching Methodology for Youth Coaches

Sergio Lara-Bercial
Carnegie School of Sport, Leeds Beckett University, UK

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
skill acquisition specialist, coaching, practice theory, learning, theory of practice architectures

Background
Sport performance has been described as one of the most demanding challenges faced by the human brain, comparable only to the cognitive demands experienced by combat soldiers (Walsh, 2014). Within this context, the notion of Sport IQ (SIQ) has gained prominence in team sports as a defining feature of elite performers. Coaches, analysts, and fans often elevate players judged to have exceptional "IQ". Nikola Jokić, Tom Brady, and Andrés Iniesta are frequently cited examples. Despite its widespread use, however, SIQ remains poorly defined.

Aim
This presentation aims to critically examine how SIQ has been conceptualised in academic studies and, combining research insights with the author's personal experiences across three decades of applied coaching practice, proposes an integrative definition and accompanying developmental framework to understand and foster SIQ in youth team sports.

Methods
A scoping review of extant academic literature on sport intelligence in team sports was conducted. Criteria for inclusion included publication in English from 2010 onwards to offer a contemporary view of the field. The resulting sample was analysed across three main themes: (1) the definition of sport IQ/game intelligence offered, (2) the theoretical framework of the papers; and (3) the recommendations provided for practitioners.

Results / Findings
The scoping review suggests that existing definitions reduce SIQ to the study of isolated in-game decisions often examined through laboratory-based tasks or decontextualised scenarios. Common theoretical frameworks include executive brain functions, perceptual–cognitive expertise, and decision-making (e.g., Haugan et al., 2025; Hogan et al., 2023; Roca et al., 2012; Memmert & König, 2025). With regards to recommendations for practitioners, the existing literature primarily focuses on the creation of representative practice environments and isolated and decontextualised in-action decision-making. We contend that, while valuable, these approaches capture only fragments of intelligent play and neglect the dynamic, relational, and contextual nature of performance in team sports.

Conclusion

In response to these findings, and factoring in his coaching experience in talent development environments, the author proposes a broader conceptualisation of SIQ that situates intelligent performance within the interaction of perceptual, cognitive, tactical, social, and contextual processes. From this perspective, SIQ can be understood as "the ability to individually and collectively make optimal decisions pre-game, during, and post-game whilst considering both the general and situational context". The author argues that these decisions are mediated by the players' executive functions and perceptual-cognitive skills and powered by individually and collectively held knowledge. Building on this expanded definition, the paper outlines a comprehensive and practical coaching methodology designed to develop all the components of SIQ in youth players. Implications for talent identification, player development, and coach education are considered.

References

Haugan, J. A., Lervold, K., Kaalvik, H. & Moen, F. (2025) A scoping review of empirical research on executive functions and game intelligence in soccer. *Frontiers in Psychology, 16*, article 536174. https://doi.org/10.3389/fpsyg.2025.1536174

Hogan, S. R., Taylor, D., Boone, R. T., & Bowman, J. K. (2023). The athletic intelligence quotient and performance in the National Basketball Association. *Frontiers in Psychology, 14*, article 1197190. https://doi.org/10.3389/fpsyg.2023.1197190

Memmert, D., & König, S. (2025). The mental game: Cognitive training, creativity, and game intelligence in basketball. Meyer & Meyer Sport.

Roca, A., Ford, P. R., & Williams, A. M. (2012). Perceptual–cognitive skills and their interaction as a function of task constraints in soccer. *Journal of Sport & Exercise Psychology, 34*(2), 185–203. https://doi.org/10.1123/jsep.34.2.185

Rohlin, M (2020). Inside The mind of LeBron James: An exclusive look at his basketball IQ. *Sports Illustrated*. Accessed 11th February 2025. https://www.si.com/nba/2020/03/27/inside-the-mind-of-lebron-james-a-look-at-his-iq

Walsh, V. (2014). Is sport the brain's biggest challenge*? Current Biology, 24*(18), 859–860.

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Establishing consensus for Effective Talent Development Environments in Sport

James H. Dugdale[1], Robin Owen[2], Matthew J. Reeves[3], Matthew Andrew[4], Adam L. Kelly[5], Vish Unnithan[6], Alex Lascu[7], Simon J. Roberts[8], and Russell J. J. Martindale[1]

[1]School of Applied Sciences, Edinburgh Napier University, UK
[2]Liverpool Hope University, UK
[3]Centre for Applied Sport, Physical Activity, and Performance, University of Lancashire, UK
[4]Manchester Metropolitan University Institute of Sport, UK
[5]Birmingham City University, UK
[6]University of the West of Scotland, UK
[7]University of Canberra, Australia
[8]Research Institute for Sport & Exercise Sciences, Liverpool John Moores University, UK.

Keywords
talent development, sport, Delphi, applied, expertise

Background
Despite talent development garnering great professional, financial, and research interest, it is still regarded as a highly heterogenous field, with limited consensus on optimal practice (Baker et al., 2024).

Aim
A modified e-Delphi approach (Hohmann et al., 2018) was used to establish consensus among an array of expert researchers and practitioners working within talent development. Specifically, principles related to the environment were evaluated, whereby coaches and stakeholders can influence the development of talent.

Methods
Data collection took place via 3 online survey rounds hosted on Qualtrics. A total of 31 experts agreed to participate in round 1 (*M* age = 49.16 years; *M* experience = 21.39 years; *n* female = 2; *n* academics = 19; *n* practitioners = 12; majority working in the west; mix of team and individual sports); in this round, experts were shown a total of 18 statements, developed by the research team, and were asked to rate their relevance and wording. Experts were also asked to suggest additional statements at the end of round 1, which were rated in terms of relevance and wording in round 2. In round 3, the relative importance of statements was assessed.

Results
In round 1, all 18 statements achieved consensus greater than or equal to 70% on relevance and wording metrics. Based on expert feedback, 4 additional statements were generated and assessed in round 2, where they too reached consensus greater than or equal to 70% on both metrics. In round 3, experts provided a ranking, in order of importance, for all 22 statements.

Conclusion

The present results provide a framework for optimal practice within applied talent development environments, derived from a combined academic and applied viewpoint. Organisations involved in talent development may wish to consider the statements developed within this e-Delphi to inform their practice. Additionally, future studies are encouraged to empirically test the principles identified by the present expert panel.

References

Baker, J., Johnston, K., & Till, K. (2024). Is it time to retire 'talent' from discussions of athlete development?. *High ability studies*, *35*(1), 93-105.

Hohmann, E., Cote, M. P., & Brand, J. C. (2018). Research pearls: expert consensus based evidence using the Delphi method. *Arthroscopy: the journal of arthroscopic & related surgery*, *34*(12), 3278-3282.



JoE

Exploring the Key Characteristics for Talent Identification and Development in South African Youth Soccer

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Alliance Kubayi and Walter Steenbok

Department of Human Movement and Therapeutic Sciences, Tshwane University of Technology, South Africa

Keywords
quality coaching, parental support, psychological skills, decision-making

Background
Identification and development of talent are essential in accelerating youth players to reach professional level in soccer (Lethole et al., 2024). Therefore, many professional teams have expanded their scouting networks to identify and nurture players with potential. Thus, additional resources are required to support this process for all stakeholders in talent identification and development, such as national federations, professional clubs, coaches, scouts, parents, and players. However, these processes are not understood well in places such as South Africa.

Aim
The aim of this study was to investigate which characteristics youth soccer coaches believe are crucial when identifying and developing talent.

Methods
This study used a parallel mixed-methods research design. A total of 141 South African soccer coaches took part in this study. In addition, a sub-sample of 17 soccer coaches participated in the semi-structured interviews.

Results
The results showed that soccer coaches identified psychological (e.g., coachability, communication), physical (e.g., endurance, height, and speed), tactical (e.g., creativity, 1v1 situations, decision-making), and technical (e.g. first touch, dribbling, passing, and finishing) skills as the most important. Furthermore, quality coaching, nutrition, parental support and psychological preparation were identified as key qualities for player development pathways.

Conclusion
This study provides preliminary evidence of the skills soccer coaches consider essential during the process of talent identification and lays a foundation for the development of further objective assessment methods to inform this process.

References

Lethole, L., Kubayi, A., Toriola, A., Larkin, P., & Armatas, V. (2024). Development of the Talent Identification Questionnaire in Soccer for Outfield Players (TIDQ-OP): Coaches' perceptions of the key attributes for player recruitment. *Journal of Sports Sciences, 42*(4), 291–300.



Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Understanding High Potential and Pathways to Excellence: Insights from Dutch Elite Athletes and Coaches

Irene R. Faber[1] and Kathryn Johnston[2]

[1]Department of Human Movement Sciences, University of Groningen, the Netherlands
[2]Tanenbaum Institute for Science in Sport, University of Toronto, Canada

Keywords
aptitude, talent development, elite sport

Background
Many sport associations implement talent development programmes to identify young high-potential athletes and to support youth aspiring to become elite athletes (Hauser et al., 2024). However, identifying future elite athletes at an early age remains challenging, and key predictors of success are not well understood (Barreiros et al., 2014). Gaining insight into the nature of 'high potential'—often used as a label to identify promising athletes—and developmental pathways to expertise may improve talent development practices. The experiences and perceptions of world-class athletes and their coaches can provide valuable insights into this process.

Aim
This study aimed to explore how 'high potential' is conceptualised and how the pathway to excellence is experienced by key stakeholders in elite sport.

Methods
A qualitative design informed by constructivist and pragmatic paradigms was employed. Semi-structured, narrative-based interviews were conducted with 13 Dutch world-class athletes (5 women, 8 men) from 9 sports (field hockey, table tennis, water polo, tennis, squash, volleyball, beach volleyball, football, and basketball) and their formative coaches (1 woman, 12 men). These athletes represented their country in international competition including (but not limited to) the Olympics and World Championships. Interviews were transcribed verbatim. Inductive thematic analysis with open and axial coding was conducted (Braun et al., 2022), with multiple researchers independently coding the transcripts. Consensus discussions were held to ensure consistency and to enhance rigor. Member checks were performed on interview summaries, allowing participants to verify the accuracy of interpreted data and strengthen credibility. Peer debriefing sessions were held throughout the analysis process to critically reflect on emerging themes and ensure dependability. Rich contextual descriptions of participants and their environments were provided to enhance transferability.

Findings
Preliminary analyses identified seven interrelated themes including early exposure, deliberate play, task fit, rapid learning, taking the next step, constant competition, and reaching the top of the world. These findings provide insight into how elite players progress through developmental pathways, highlighting the interplay between individual abilities, task demands, and environmental support. The themes offer actionable guidance for coaches, including creating stimulating environments, promoting deliberate

play, providing individualised instruction, and guiding players through successive developmental steps while fostering mental resilience and competitive experience.

Conclusion

High potential and the pathway to excellence are best understood as emerging from the continuous interaction between athlete, task, and environment over time. These findings align with the ecological dynamic's framework proposed by Newell (1986) and offer practical directions for the design of talent development programmes in sport.

References

Barreiros, A., Côté, J., & Fonseca, A. M. (2014). From early to adult sport success: Analysing athletes' progression in national squads. *European Journal of Sport Science*, *14*(sup1), S178-S182. https://doi.org/10.1080/17461391.2012.671368

Braun, V., Clarke, V., & Hayfield, N. (2022). 'A starting point for your journey, not a map': Nikki Hayfield in conversation with Virginia Braun and Victoria Clarke about thematic analysis. *Qualitative Research in Psychology, 19*(2), 424–445. https://doi.org/10.1080/14780887.2019.1670765

Hauser, L. L., Harwood, C. G., Höner, O., O'Connor, D., & Wachsmuth, S. (2024). Talent development environments within sports: A scoping review examining functional and dysfunctional environmental features. *International Review of Sport and Exercise Psychology, 17*(2), 1105–1131. https://doi.org/10.1080/1750984X.2022.2129423

Newell, K. M. (1986). Constraints on the development of coordination. In M. G. Wade, & H. T. A. Whiting (Eds.), Motor development in children: Aspects of coordination and control (pp. 341–360). The Netherlands: Martinus Nijhoff, Dordrecht. http://dx.doi.org/10.1007/978-94-009-4460-2_19

JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Development and Initial Validation of the Holistic Talent Development Environment Questionnaire

Barnaby Sargent Megicks
Centre for Mental Health, Sport, and Physical Activity, Edge Hill University, UK

Keywords
talent development, holistic development, youth athlete, psychometric questionnaire

Background
In response to mounting concerns over the intensive training, high professionalisation, and low progression rates in talent identification and development systems, there is a growing focus on maximising the personal value of athlete experiences through holistic development approaches (Bergeron et al., 2024). The concept of 'holistic talent development' (HTD) has subsequently emerged, directing a prioritisation of health and wellbeing, and life readiness alongside performance development at the environment level in talent development (Sargent Megicks, 2025). As such, it has become of interest to seek to identify and measure the quality of the social, cultural and psychological conditions of HTD environments (Till et al., 2023). Yet, no tool currently exists to comprehensively support this endeavour.

Aim
This study aims to develop and initially validate the 'Holistic Talent Development Environment Questionnaire', a tool created to examine youth athletes' (aged 13-21) perceptions of HTD quality in their development environment.

Methods
Following global psychometric standards, the study adopts a 4-phase mixed-methods approach.

Results and Findings
In Phase 1, initial item generation through a literature review produced 140 items corresponding to the measurement of HTD environment features, structured on 4 subscales: 'Collaborative Community and Organisation', 'Fostered Interpersonal Relationships and Culture', 'Management of Progress and Prospects', and 'Integrated Psychosocial and Life Skills Learning'. In Phase 2, 17 independent research and practitioner experts were recruited internationally from 6 countries, across multiple individual and team sports, having between 6-10 (41%) and 10+ years (59%) experience in their field and with the majority educated to doctoral level (82%). The experts indicated high levels of relevance and importance when rating all items, with a mean of 4.3 and 4.3 out of 5, respectively. However, a lower score for readability of 4.0 and open-text comments suggest that improvements can be made in relation to readability for younger athletes and the overall length of the questionnaire. Looking forward, for Phase 3, 24 youth athletes across 3 clubs have been recruited to further examine face validity will which ensure advancements in readability. To further advance construct validity and reliability, youth athletes will be recruited across the UK and Ireland for mass survey completion in Phase 4, enabling a factor analysis to be completed that will result in the reduction of questionnaire size and an improved factorial structure.

Conclusion

Resulting from these processes is a robust tool for application in research and practice that will enable the discovery of perceived strengths and weaknesses in HTD environments, informing organisational change, directing coach/practitioner development, and evaluating interventions, specifically in relation to the intersection of performance, health and personal development of youth athletes. The instrument will also enable the future examination of cultural, demographic, and sport-specific insight into the process of HTD, to reveal macro-level trends.

References

Bergeron, M.F., Côté, J., Cumming, S.P., Purcell, R., Armstrong, N., Basilico, L., Burrows, K., Charrin, J.B., Felix, A., Groesswang, H., Iwasaki, Y., Kocher, M.S., Martowicz, M., McConnell, K., Moran, J., Holm Moseid, C., Mountjoy, M., Soligard, T., Tetelbaum, E., Thiel, A., Vertommen, T., Viseras, G., Budgett, R., Engebretsen, L., & Erdener, U. (2024). IOC consensus statement on elite youth athletes competing at the Olympic Games: Essentials to a healthy, safe and sustainable paradigm. *British Journal of Sports Medicine, 58*(17), 946–965.

Sargent Megicks, B. (2025). Developing a theoretically grounded and practically orientated model for holistic talent development in sport [Doctoral dissertation]. Leeds Beckett University.

Till, K., Baker, J., Lara-Bercial, S., & Sargent Megicks, B. (2023). Talent Development in Grassroots Soccer. In M. Duncan, M. Noon, & A. Seabra (Eds.), Science and Practice of Youth Football (pp. 89-110). Routledge.

Developing the Whole Athlete: A Systematic Review of Psychological and Psychosocial Interventions in Organised Youth Sport

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Claudia Kearney[1], Edward K. Coughlan[1,2], Lisa Bolger[1], and Con Burns[1]
[1]HEX-SPO Research Group, Munster Technological University, Ireland
[2]Movement & Skill Ireland

Keywords
youth athletes, psychosocial interventions, psychological skills training, talent development, systematic review

Background
Youth athletes must learn to cope with sporting problems in order to maintain motivation and performance levels (Foster et al., 2016; Weinberg & Gould, 2019). Psychological techniques can help youth athletes manage the increasing demands and pressures of youth sport environments and talent development pathways (Dohme et al., 2019). The evidence base for effective psychological and psychosocial interventions within this population remains fragmented and underexplored. Existing systematic reviews have examined psychological interventions in adult athletes (Reinebo et al., 2024; Wang et al., 2025), but no prior review has comprehensively synthesised the effectiveness of such interventions specifically within youth athlete populations. Given the unique development considerations of adolescence and the formative nature of early sport experiences, a dedicated synthesis is warranted.

Aim
This systematic review aimed to synthesise and critically evaluate the evidence for interventions targeting the development of psychological skills and psychosocial characteristics in adolescent athletes. Specifically, the review examined intervention characteristics, summarised outcomes assessed, evaluated intervention effects, appraised methodological quality, and identified gaps in the evidence base.

Methods
The review was conducted in accordance with the PRISMA statement. Five electronic databases were searched (Academic Search Complete, EBSCOHost, PubMed, Science Direct, and SPORTDiscus) from January 2010 to December 2025. Inclusion criteria required peer-reviewed studies involving youth athletes aged 12–18 years, participating in organised sport, with interventions targeting psychosocial or psychological development. Methodological quality was independently assessed by two reviewers using appropriate JBI critical appraisal tools and the Mixed Methods Appraisal Tool, determined by study design. Inter-rater reliability exceeded 90%, with full consensus achieved following discussion.

Results
Eighteen studies met the inclusion criteria, involving over 1,000 youth athletes across eight sports and 13 countries. Quasi-experimental designs dominated (n = 13), with only one randomised control trial identified. Overall, intervention effects were predominantly positive across psychosocial outcome areas. The strongest and most consistent evidence emerged for anxiety and stress reduction, confidence and

self-belief development, and coping and psychological skill development. Moderate evidence supported improvements in team and social outcomes, mental wellbeing, and motivation, particularly in coach-led, embedded, and multimodal programme formats. Findings for mood and performance outcomes were mixed. Methodological quality was predominantly moderate, with common limitations related to follow-up reporting, confounder control, and demonstration of measurement reliability within studies.

Conclusion

Psychological and psychosocial interventions demonstrate meaningful potential for supporting the holistic development of youth athletes across talent development and community sport settings. However, as the current evidence base is constrained by a predominance of quasi-experimental designs, male-only samples, and an absence of longitudinal data, the strength of conclusions that can be drawn is limited. Future research must prioritise rigorous designs, longitudinal follow-up, and a greater representation of female athletes to translate promising findings into generalisable practice guidance for sports psychologists, coaches, and youth sport organisations. At present, structured, multimodal, and coach-embedded programmes delivered over a minimum of eight to twelve weeks appear to offer the most promising outcomes, which talent development environments consider. Key findings from this review will inform the development and implementation of a holistic athlete development intervention within a Gaelic Games Talent Academy setting, offering a novel applied model for talent development research and practice.

References

Dohme, L., Piggott, D., Backhouse, S., & Morgan, G. (2019). psychological skills and characteristics facilitative of youth athletes' development: A systematic review. *The Sport Psychologist, 33*(4), 261–275. https://doi.org/10.1123/tsp.2018-0014

Foster, D., Maynard, I., Butt, J., & Hays, K. (2016). Delivery of psychological skills training to youngsters. *Journal of Applied Sport Psychology, 28*(1), 62–77. https://doi.org/10.1080/10413200.2015.1063097

Reinebo, G., Alfonsson, S., Jansson-Fröjmark, M., Rozental, A., & Lundgren, T. (2024). Effects of psychological interventions to enhance athletic performance: a systematic review and meta-analysis. *Sports Medicine, 54*(2), 347–373. https://doi.org/10.1007/s40279-023-01931-z

Wang, W., Schweickle, M. J., Arnold, E. R., & Vella, S. A. (2025). Psychological interventions to improve elite athlete mental wellbeing: A systematic review and meta-analysis. *Sports Medicine, 55*(4), 877-897. https://doi.org/10.1007/s40279-024-02173-3

Weinberg, R. S., & Gould, D. (2019*). Foundations of sport and exercise psychology* (7th ed.). Human Kinetics Publishers.

Health in Talent Development Programmes

Maaike Heerschop[1], Nicoline Hertogs[1], Lisanne Balk[2], and Ruud J. R. den Hartigh[2]

[1]Muller Institute, the Netherlands
[2]Department of Psychology, University Groningen, the Netherlands

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
talent development environments, mental health, athlete wellbeing, psychological safety

Background
Talent development programs are aimed at nurturing youth athletes towards the elite level. While the major focus typically lies on accelerating athletes' performance (Burgess & Naughton, 2010; K. Ericsson, 2003), little research exists on the physical and mental health of athletes involved in these environments.

Aim
This study examined how talented athletes within Dutch national sport federations rate their talent development environment, their mental health and their physical health. Furthermore, the study investigated which factors influence how talented athletes within Dutch national sport federations evaluate their talent development environment and how this relates do their physical and mental health.

Methods
A sample of 1149 talented athletes, affiliated with one of the talent development programs across 41 national sport federations, filled out a questionnaire on their physical and mental health, sports environment, and more specific questions related to training and coaching.

Results
Athletes reported positive perceptions of their sport environment (M = 7.7/10) and favourable levels of physical and mental health (M = 7.5 and 7.6, respectively). Multilevel analyses showed that a more positive evaluation of the sport environment was significantly and positively associated with better mental and physical health, higher-quality coach–athlete relationships, better perceived training facilities, and greater perceived safety. Mental health was positively associated with physical health, stronger coach–athlete relationships, higher dual-career compatibility, and greater perceived safety. In turn, physical health was positively associated with mental health. In contrast, information provision on inappropriate behaviour showed a negative association with physical health, making it the only factor that was inversely related to a health outcome. Notably, among athletes who rated their mental health as insufficient, perceived safety was the only significant predictor of mental health, underscoring its critical role for more vulnerable athletes.

Conclusion
While talented athletes in Dutch sport federations generally reported favourable perceptions of their sport environment and relatively high levels of physical and mental health, this study identified specific factors that were closely associated with these outcomes. These findings indicated that talent development environments should focus on fostering psychological safety, strong coach–athlete

relationships, dual-career compatibility, and paying attention to both mental and physical health to support sustainable performance and athlete wellbeing. Together, these findings underscored the importance of designing sport environments that integrated both developmental and performance-oriented principles.

References

Burgess, D. J., & Naughton, G. A. (2010). Talent development in adolescent team sports: A review. *International Journal of Sports Physiology and Performance, 5*(1), 103–116. https://doi.org/10.1123/IJSPP.5.1.103

Ericsson, K. A. (2003). Development of elite performance and deliberate practice: An update from the perspective of the expert performance approach. In J. L. Starkes & K. A. Ericsson (Eds.), Expert performance in sports: Advances in research on sports expertise (pp. 49–81). Champaign, IL: Human Kinetics.



JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Making the Case for More Compassionate Ways of Supporting the Development of Young Athletes

Angus Meichan and Philip Molyneux
Faculty of Health Sciences, University of Hull, UK

Keywords
compassion, CFT, compassionate mind training, evolutionary history, academy football

Background
Compassion is of interest in sport and performance environments for its potential use in reducing and recovering from extreme emotions (McCarthy et al., 2013). There is clear evidence that self-compassion is positively related to well-being and performance outcomes (Cormier et al, 2025); evidence also suggests that compassion to and from others is linked to healthier, more adaptive, competitive mindsets (Backman et al, 2025). However, to date, the growing interest in the role of compassion in sport has been mainly concerned with self-compassion and Neff's (2023) three components of self-kindness, common humanity and mindfulness.

Aim
The aim of this presentation is to introduce delegates to the conceptualisation of compassion applied in Compassion-Focused Therapy (CFT; Gilbert, 2020). This is less cited in sports literature, which is perhaps surprising as it has robust theoretical foundations and emphasises not only self-compassion but also compassion to and from others, which might broaden its appeal in sport environments particularly within team and youth sports. In particular, the presentation will explore the evolutionary basis of compassion in order to demonstrate its "potential to inform ongoing debates in athlete development and performance" (Baker & Johnston, 2025, p. 6).

Methods
Reference will be made to a novel 8-week programme of Compassionate Mind Training (the psychoeducational part of CFT) called COMMIT®, which has been implemented in an English Football League academy with U10-U14 footballers. The programme encouraged the players to commit to alleviating and preventing suffering in self, team and others; or in other words to be helpful rather than harmful in word and deed. The effectiveness of the programme was measured using a randomised controlled trial, in which a sample of 60 players was randomly assigned to either the intervention group or a waiting list control group. Measures of self-compassion, resilience, performance satisfaction, well-being and performance anxiety were completed pre- and post-intervention and at two months follow up. The social validity of the programme was assessed using focus group interviews with the intervention group following the intervention programme.

Results and Findings
Analysis of covariance (ANCOVA) showed a statistically significant decrease in emotional reactivity and a statistically significant increase in performance satisfaction for the intervention group compared to a control group. Critical realist thematic analysis of the focus group interviews suggested that in part due

to the development of 'knowing awareness' and 'wise action', there was a tendency for the academy footballers participating in COMMIT® to experience 'less negativity' and 'more positivity', which benefitted them in being able to manage their emotions better, being a better teammate and performing better on the pitch. A small minority of players demonstrated certain 'fears, blocks and resistances' to compassion.

Conclusion

The implications of a more compassionate approach to athlete development and support possibly delivering better outcomes – or at the very least not producing worse outcomes – will be discussed and some provocative recommendations made.

References

Backman, E., Henriksen, K., & Zettler, I. (2026). Beyond self-compassion: A scoping review of other-focused compassion in competitive sports environments. *International Journal of Sport and Exercise Psychology*, *24*(7), 1308–1335. https://doi.org/10.1080/1612197X.2025.2516058

Baker, J., & Johnston, K. (2025). An evolutionary psychology perspective on athletic development and performance: Differences between proximate and ultimate explanations. *Sports Medicine, (55)*, 1–7. https://doi.org/10.1007/s40279-024-02155-5

Cormier, D. L., Kowalski, K. C., Ferguson, L. J., Mosewich, A. D., McHugh, T.-L. F., & Röthlin, P. (2025). Self-compassion in sport: A scoping review. *International Review of Sport and Exercise Psychology, (18)*1, 154–193. https://doi.org/10.1080/1750984X.2022.2161064

Gilbert, P. (2020). Compassion: From its evolution to a psychotherapy. *Frontiers in Psychology, (11)*586161. https://doi.org/10.3389/fpsyg.2020.586161

Neff, K. D. (2023). Self-compassion: Theory, method, research, and intervention. *Annual Review of Psychology, (74)*, 193–218. https://doi.org/10.1146/annurev-psych-032420-031047

McCarthy, P. J., Gupta, S., & Burns, L. (2023). Cognitive behaviour therapy in sport and performance: An applied practice guide. Routledge.

JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Behind Closed Doors: Redesigning the Financial Model of a UK Sports School Scholarship Programme

James Earle, Kevin Till, and Ian Cowburn
Centre for Child and Adolescent Physical Literacy, Leeds Beckett University, UK

Keywords
talent development, resource allocation, action research

Background
The investment of resources within talent identification and development systems (TIDS) is often undisclosed. National governing bodies, sports academies and sports schools offer resource support (i.e., access to training, facilities, coaching, financial support) to identified athletes to achieve success (De Bosscher et al., 2006). In sport schools, one financial incentive to attract student-athletes is a sport scholarship (Bourke, 2020). Despite this financial commitment, little research has been conducted into the resource allocation within sport schools or TIDS (Till & Baker, 2020).

Aim
To redesign the financial model of a sports scholarship programme with two aims: (1) reduce the net cost to the school and (2) enhance student-athlete development.

Methods
Action research was chosen to generate solutions from personal and empirical theory driven data, utilising the cyclic process of observing, planning, acting and evaluating to prescribe a pragmatic solution (McNiff, 2017). This case study presents five stages involved in the financial redesign of a sports scholarship programme.

Findings
Stage one involved developing contextual understanding and identified two problems. First, the existing sports scholarship programme provided only a reduction in school fees while any participation in sports coaching programmes incurred additional costs. Second, the scholarship delivered minimal direct developmental benefit to student-athletes as its value functioned primarily as financial support for parents. Stage two consisted of a financial review of the existing scholarship programme (n =71). The sports scholarship programme cost £504,000 per year to operate, resulting in an annual loss of £159,000. Stage three involved reviewing sport scholarship programmes from international (Radtke & Coalter, 2007) and UK sport schools. It was apparent many different models exist which are driven and underpinned by institutional context and social-cultural factors. Common features included a fee remission, free (or reduced cost) training, access to training facilities and coaches, and flexible academic timetabling. Stage four applied iterative action research cycles until an improved solution was found. Upon reflection, satisfying multiple stakeholders and aligning to the wider institutional context proved challenging; applying data from both the literature and UK sports schools helped generate possible solutions. Sports schools operate as a business and can make decisions quickly; the model was accepted and implemented within five months. Stage five, achieved three outcomes: (1) the net cost of the sports scholarship programme was reduced by £158,000; (2)

the new model repositioned student-athlete development as the primary factor in decisions, with scholarships providing coaching and development opportunities and secondarily offering discretionary fee remission; (3) an improved student-athlete learning and development provision was created through a dedicated development budget. The redesigned model also increased flexibility through improved integration in the school, delivering greater security to ensure the long-term future of a sports scholarship programme.

Conclusion

This study highlights the complex social, institutional and development considerations underpinning financial decision-making within a fee-paying sports school sports scholarship programme. Ultimately, the effectiveness of sports schools' sport scholarship programmes will be balancing their resources and placing student-athlete development first to achieve sustained academic and sporting success.

References

Bourke, A. (2020). Sports scholarships in Ireland: A review of the issues. *Sport in Society, 23*(8), 1354–1369. https://doi.org/10.1080/17430437.2020.1769955

De Bosscher, V., De Knop, P., Van Bottenburg, M., & Shibli, S. (2006). A conceptual framework for analysing sports policy factors leading to international sporting success. *European Sport Management Quarterly, 6*(2), 185–215. https://doi.org/10.1080/16184740600955087

McNiff, J. (2017). Action research: All you need to know. SAGE Publications Ltd. https://doi.org/10.4135/9781036234638

Till, K., & Baker, J. (2020). Challenges and [possible] solutions to optimizing talent identification and development in sport. *Frontiers in Psychology*, *11*, 664. https://doi.org/10.3389/fpsyg.2020.00664



JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Examining Rugby Talent Development Ecosystems: Introducing the Interconnected Rugby Talent Development Model

Christy O'Shea, Tom Mitchell, and Kevin Till
Carnegie School of Sport, Leeds Beckett University, UK

Keywords
Rugby Union, inter-organisational collaboration, talent development, talent pathways

Background
Talent pathways have been highlighted as fundamental to the sustainability of professional sport, ensuring continuing transition of young players into elite levels. Similarly, over the past 20 years, talent development environments (TDEs) have been progressively researched in sport, focusing on the settings where aspiring elite athletes train and compete and how various internal and external factors play a role in an athlete's sporting outcomes (Henriksen et al., 2010). Within Rugby Union (RU), talent pathways that transition youth rugby players (under 18s) to professional clubs and academies contrast with other global team sports that are academy-led from a young age (e.g., football). As RU talent pathways can often be shaped by the strategic objectives of a national union, limited consideration has been given to the role of inter-organisational collaboration in a holistic RU pathway system. While acknowledged that there are multiple TDEs operating concurrently (Shelley et al., 2025), it is unknown how multiple TDEs interact, communicate, align programmes and function cohesively for long-term player development (Mathorne et al., 2021).

Aim
This study presents the Interconnected Rugby Talent Development Model and outlines how, as a PhD research project, it is proposed to examine relationships between schools, academies, and national unions within RU talent pathways.

Methods
Grounded in established talent development theories, the Rugby Organisational Triangle, consisting of the three key organsiations in a RU talent pathway (school, professional academy, and national rugby union), is used to examine how relationships between organisations are structured and how they align and interact within a national RU talent development pathway .

Findings
The Interconnected Rugby Talent Development Model contains intersecting domains of the talent development pathway and considers the effect they have across the micro, meso, and macro levels of the system. From a school rugby programme to professional academy to national player pathway strategy, there is currently a gap in understanding how TDEs interact with each other. Consequently, these school rugby programmes' effectiveness, perceptions of these programmes as TDEs, and the interorganisational collaborations (between Schools, Professional Academies, and the National RU) remain underexplored. The application of this model as part of this PhD research will investigate the alignment and collaboration between these key RU stakeholders across the Home Nations (England, Scotland, Wales, and Ireland), exploring similarities and differences in national pathway strategies while understanding how professional

academy staff perceive the role of the school rugby programme within the broader rugby talent development system. In addition, the effectiveness of schools as RU TDEs and their connection to pathway structures and national policy will be assessed.

Conclusion

Collectively, this proposed Interconnected Rugby Talent Development Model enables analysis of the relationship between school environments, academy engagement, and national governing bodies, offering a holistic perspective on RU's talent pathway ecosystem. Insights from this research may inform how both established and emerging rugby nations strengthen alignment across RU TDEs to support sustainable elite player pathways.

References

Henriksen, K., Stambulova, N., & Roessler, K. K. (2010). Holistic approach to athletic talent development environments: A successful sailing milieu. *Psychology of Sport and Exercise, 11*(3), 212–222. https://doi.org/10.1016/j.psychsport.2009.10.005

Mathorne, O., Stambulova, N., Book, R., Storm, L. K., & Henriksen, K. (2021). Shared features of successful interorganizational collaboration to promote local talent development environments in Denmark. *Scandinavian Journal of Sport and Exercise Psychology, 3*, 2–12. https://doi.org/10.7146/sjsep.v3i.121379

Shelley, A., MacNamara, Á., Behan, S., McCarthy, N., Jones, B., & Taylor, J. (2026). No solutions, only trade-offs: An exploration of contextual factors influencing rugby union talent development environments. *Journal of Sports Sciences*, *44*(17–18), 2300–2311. https://doi.org/10.1080/02640414.2025.2486884

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Exploring the Developmental Experiences of Sports Officials Across Multiple Sports and Countries: Qualitative Insights from an International Survey

Ian Cunningham[1], Duncan R. D. Mascarenhas[1], Russell J. J. Martindale[1], Alex Lascu[2], and Joe Baker[3]

[1]School of Applied Sciences, Edinburgh Napier University, UK
[2]School of Rehabilitation & Exercise Science, The University of Canberra, Australia
[3]Tanenbaum Institute for Science in Sport, University of Toronto, Canada

Keywords
talent development, sports officiating, development environments, experiential learning, organizational context

Background
Understanding the developmental experiences of sports officials is critical for improving training, retention, and officiating quality. Research has been dominated by performance factors (e.g., decision-making, communication, physical fitness), while development remains underexplored. Where addressed, it has drawn on athlete development models (MacMahon & Weissensteiner, 2024) and coaching concepts of learning (Kittel et al., 2026), alongside limited work on developmental histories, deliberate practice, and career transitions (e.g., McEwan et al., 2023). Consequently, there is limited insight into development processes, talent development, and officials' lived experiences and pathways, highlighting the need to better understand how officials perceive their development environments.

Aim
This study aimed to explore officials' developmental experiences through open-ended survey questions, capturing qualitative insights into how officials across sports and countries perceive and engage with their development.

Methods
The sample included 90 male and 18 female officials (M_{age} = 44 years, SD = 15.4; M_{exp} = 16 years, SD = 12.9) from 32 national and international organisations across Canada, USA, United Kingdom, Portugal, New Zealand, Australia, Sri Lanka, China, Norway, Bermuda, Germany, and the Netherlands. Sports represented included association football (n = 30), field hockey (n = 21), rugby union (n = 16), basketball (n = 13), ice hockey (n = 7), with touch rugby, tennis, volleyball, netball, and cricket comprising the remainder. As part of a broader research programme on talent development in sports officials and a wider questionnaire validation process, participants responded to two open-ended items examining (a) key factors supporting their development and (b) areas requiring additional support. Responses were analysed inductively using thematic analysis, involving the identification of meaning units and the development of higher-order themes.

Findings

Game and match experience (i.e., volume, variety, challenge) emerged as the most consistently reported driver of development, reinforcing the importance of experiential learning in officiating contexts. However, a clear misalignment was evident between what officials perceive as most effective and the support structures currently in place. Areas such as development planning, selection transparency, and coaching were frequently identified as under-supported, despite being considered critical to progression. Notably, several key developmental mechanisms, including coaching, feedback, and formal training, were simultaneously described as both valuable and insufficient, pointing to inconsistencies in their quality, accessibility, and implementation. Organisational factors, particularly communication and the clarity and coherence of development pathways, emerged as key areas requiring improvement, underscoring the influence of systemic structures on officials' development experiences. In contrast, direct peer learning and officiating communities (e.g., online discussion forums and group chats) were among the most widely valued, emphasising the central role of informal, socially embedded learning in officials' development.

Conclusion

Collectively, these findings suggest that current development systems may over-rely on formal structures while under-leveraging relational and experiential processes. A more integrated approach, combining structured development pathways with enhanced opportunities for peer interaction, mentorship, and applied match/game experience may better align with officials' needs. Improving organisational transparency and the consistency of coaching and feedback provision may further support officials' confidence, engagement, and retention.

References

Kittel, A., Cunningham, I., Lascu, A., Larkin, P., Vickery, W., & MacMahon, C. (2026). Developing sport officials: What can we learn from our knowledge on coach development? *International Journal of Sports Science & Coaching*, *21*(3), 1703–1717. https://doi.org/10.1177/17479541251408003

MacMahon, C., & Weissensteiner, J. R. (2024). Career development of officials. In T. Webb, D. Hancock, P. Phillips, & J. Tingle (Eds.), Managing and developing sports officials (pp. 69–82). Routledge.

McEwan, G. P., Unnithan, V. B., Easton, C., & Arthur, R. (2023). Training practices and perceptions of soccer officials: Insights from the Referee Training Activity Questionnaire. *International Journal of Sports Science & Coaching, 18*(4), 1173–1189.



JoE

Longitudinal and Multidimensional Perspectives on Talent Development in Tennis

Barbara C. H. Huijgen[1], Koen T. H. Rikken[1], Nikki S. Kolman[2], Marije T. Elferink-Gemser[2], and Ruud J. R. den Hartigh[1]

[1]Department of Psychology, University of Groningen, the Netherlands
[2]Department of Human Movement Sciences, University of Groningen, the Netherlands

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
talent development, tennis, multidimensional performance characteristics, longitudinal, performance

Background
Talent development in tennis is a complex and dynamic process in which performance results from the interaction of physical, technical, tactical, and psychological characteristics. Talent development programs often monitor physical performance characteristics, while tennis performance itself strongly depends on sport-specific technical and tactical skills such as stroke execution, ball velocity, accuracy, anticipation, and decision making. However, longitudinal evidence on how competitive performance develops during adolescence, and how physical and tennis-specific performance characteristics relate to both current and later performance, remains limited. At the same time, tennis performance strongly depends on technical skills such as stroke execution, ball velocity, accuracy, anticipation, and decision-making. Despite this multidimensional nature, limited longitudinal research has examined how tennis performance develops during adolescence and how underlying performance characteristics relate to both current and future performance levels.

Aim
This long-term research program aims to improve understanding of talent development in youth tennis by integrating evidence on (1) developmental trajectories of competitive performance and (2) the role of physical performance characteristics and tennis-specific (technical) skills in explaining current and future performance.

Methods
Data were collected within a national youth tennis development program. First, developmental trajectories were examined using biannual national performance rating data of 1.010 talented Dutch tennis players (645 males, 365 females) followed longitudinally from ages 11.5 and 16. Growth Mixture Modelling was used to identify developmental patterns. Second, a longitudinal study examined associations between physical characteristics (e.g., change-of-direction speed, grip strength, countermovement jump, and medicine ball throws) measured at age 12 and competitive performance at ages 12 and 16. In addition, a tennis-specific performance assessment study examined the role of technical characteristics, such as ball velocity, stroke accuracy, and errors in on-court tasks, for current and future performance levels.

Results/Findings
The trajectory analyses revealed multiple developmental pathways towards higher performance levels. The highest-performing male group showed a non-linear trajectory, characterized by relatively slow

improvement until approximately age 13.5, followed by accelerated development, whereas the highest-performing female group showed more consistent linear improvement. Correlations between performance at age 16 and earlier performance increased steadily throughout adolescence (from r_s 0.6 at age 11.5 to r_s 1.0), indicating increasing performance stability, particularly in female players. Physical performance characteristics showed moderate associations with current performance, change of direction speed (r = 0.4) medicine ball throw (r = -0.4 in male and r = -0.5 in female) and sprint (r = 0.2). In males similar relations between physical performance tests and future performance were found. However limited predictive value for future performance was found in females Tennis-specific technical skills assessed in on-court performance tasks analysed with a multiple regression analysis showed that ball speed and accuracy were significant predictors of both current and futture performance (R^2 0.6 and 0.5 respectively)

Conclusion

Together, these findings underline the importance of adopting a multidimensional and developmental perspective on talent development in tennis. Performance trajectories differ substantially between players and between sexes, particularly during early adolescence. While physical characteristics contribute to explaining current performance differences, tennis-specific technical skills appear more informative for understanding performance development over time. Longitudinal monitoring, combined with assessments that capture performance in tennis-specific contexts, may therefore provide more meaningful insights into developmental pathways towards higher performance levels.

References

Kolman, N. S., Huijgen, B. C., Visscher, C., & Elferink-Gemser, M. T. (2021). The value of technical characteristics for future performance in youth tennis players: A prospective study. *PloS one, 16*(1), e0245435.

Kolman, N., Huijgen, B., Kramer, T., Elferink-Gemser, M., & Visscher, C. (2017). The Dutch technical-tactical tennis test (D4T) for talent identification and development: Psychometric characteristics. *Journal of Human Kinetics, 55*, 127.

Kolman, N. S., Kramer, T., Elferink-Gemser, M. T., Huijgen, B. C., & Visscher, C. (2019). Technical and tactical skills related to performance levels in tennis: A systematic review. *Journal of Sports Sciences, 37*(1), 108-121.

Kramer, T., Huijgen, B. C., Elferink-Gemser, M. T., & Visscher, C. (2017). Prediction of tennis performance in junior elite tennis players. *Journal of Sports Science & Medicine, 16*(1), 14.

Nijenhuis, S. B., Koopmann, T., Mulder, J., Elferink-Gemser, M. T., & Faber, I. R. (2024). Multidimensional and longitudinal approaches in talent identification and development in racket sports: A systematic review. *Sports Medicine-Open, 10*(1), 4.

Rikken, K. T. H., Huijgen, B. C. H., Hoekstra, A. E., Brouwer, M., & Den Hartigh, R. J. R. (2026). Developmental performance trajectories of talented tennis players during adolescence: A prospective longitudinal approach. *Journal of Sports Sciences*, *44*(9), 1239–1253. https://doi.org/10.1080/02640414.2026.2637050

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Talent Development Pathways: Youth-to-Senior Transitions in Europe's Top Soccer Leagues

Jan Verbeek[1,2], Steffie van der Steen[3], Nico W. van Yperen[1], and Ruud J. den Hartigh[1]

[1]Department of Psychology, University of Groningen, the Netherlands
[2]Royal Netherlands Football Association (KNVB), the Netherlands
[3]Department of Orthopedagogy & Clinical Educational Science, University of Groningen, the Netherlands

Keywords
football, transitions, career, soccer talent

Background
Clubs and governing bodies across professional soccer maintain well-resourced talent development structures that organise the identification, selection, and development of young players. The overarching goal of these systems is to prepare youth players for senior elite competitions. Underpinning a successful transition is the capacity of youth players to cope with and adapt to the demands of senior soccer (Stambulova et al., 2020). This is typically organised through first team training and playing time opportunities (e.g., Morris et al., 2014; Webb et al., 2019). However, such opportunities are limited within professional soccer and may not consistently provide appropriate developmental conditions necessary for players to adapt to the heightened demands of senior soccer (Swainston et al., 2020). This highlights the need for a deeper understanding of the developmental pathways that underpin successful transitions.

Aim
This study examined how youth players progress to senior elite levels across Europe's top soccer leagues.

Methods
Using Sequence Analysis (SA), we longitudinally mapped the competitive exposure from 2,765 male elite European players between the ages of 18 and 23. This method conceptualizes career trajectories as chronologically ordered sequences of playing states, defined by the player's competitive involvement with a first team, reserve team, or youth team. Within this methodological framework, we addressed three key questions: (1) What patterns of competitive exposure characterize players' transition to senior elite soccer? (2) Are there typical developmental pathways? And (3) Is early exposure to senior competition associated with subsequent expert performance?

Results
On average, players accumulated 114.3 (*SD* = 48.8) senior competitive appearances, but with substantial inter-individual variation. Age 19 emerged as particularly transitional, with competitive involvement distributed across first team reserve (25.6%), first team player roles (22.7%), and reserve team player roles (24.6%). Cluster analysis identified four typical pathways: "Extended Youth Team Involvement" (19.9%), "Early First Team Exposure" (46.9%), "Lower-League Exposure" (18.4%), and "Loan-Centered Development" (14.9%). These results suggest that the largest share of European soccer players

transition through early first team exposure. However, success may also be achieved through lower-tier reserve teams or loan spells, albeit less frequently.

Conclusion

These results provide valuable insights for soccer stakeholders seeking to structure effective pathways during the final phase of talent development. Although early first team playing time is widely regarded as the most desirable transition route, these opportunities remain scarce. Our findings demonstrate that successful youth-to-senior transitions are not contingent upon a single pathway but may be achieved through multiple routes that vary in the nature and context of playing time provided. Taken together, these findings highlight the need for clubs and practitioners to adopt a more flexible and individualised approach to transition pathways, providing multiple routes through which successful transitions can be achieved.

References

Webb, T., Dicks, M., Brown, D. J., & O'Gorman, J. (2019). An exploration of young professional football players' perceptions of the talent development process in England. *Sport Management Review, 23*(3), 536–547. https://doi.org/10.1016/j.smr.2019.04.007

Stambulova, N. B., Ryba, T. V., & Henriksen, K. (2020). Career development and transitions of athletes: The International Society of Sport Psychology Position Stand Revisited. *International Journal Of Sport And Exercise Psychology, 19*(4), 524–550. https://doi.org/10.1080/1612197x.2020.1737836

Morris, R., Tod, D., & Oliver, E. (2014). An analysis of organizational structure and transition outcomes in the youth-to-senior professional soccer transition. *Journal Of Applied Sport Psychology, 27*(2), 216–234. https://doi.org/10.1080/10413200.2014.980015

Swainston, S. C., Wilson, M. R., & Jones, M. I. (2020). Player experience during the junior to senior transition in professional football: A longitudinal case study. *Frontiers in Psychology, 11*, 1672. https://doi.org/10.3389/fpsyg.2020.01672

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Making It to the Big Leagues: A Multidisciplinary Systematic Review of Factors Predicting Progression to Elite Levels in Team Sports

Adam Gledhill[1,2], Tommy Lundberg[2,3], John Lind[2], and Andreas Ivarsson[2,4]

[1]Swedish Ice Hockey Association, Sweden
[2]Loughborough University, UK
[3]Karolinska Institutet, Sweden
[4]Halmstad University, Sweden

Keywords
talent identification and development, team sports, systematic review, youth athletes, elite athletes

Background
Progression from youth to senior professional or elite levels in team sports is influenced by complex, multidimensional factors. Traditional talent identification and development systems tend to privilege early physical performance, yet emerging evidence suggests that long-term success reflects a broader constellation of developmental, psychological, contextual, and demographic processes. To inform talent development policy and coaching practice, a rigorous synthesis of multidisciplinary predictors of senior-level achievement is required.

Aim
To systematically review and synthesise prospective / retrospective-prospective evidence on which multidimensional factors predict progression to senior professional or elite performance in team sports.

Methods
Following PRISMA (Page et al., 2021) and PERSiST (Ardern et al., 2022) guidelines, seven databases and grey literature sources were searched. Inclusion criteria were: (1) team sports; (2) prospective or retrospective-prospective studies; (3) adult-level outcome (e.g., professional contract, senior international selection); and (4) extractable predictors (e.g., physical, physiological, psychological, biomechanical, perceptual-cognitive predictors).

Results / Findings
Fifty-six studies met the inclusion criteria. These studies included 66,240 participants from 27 countries and 10 sports (football/soccer, ice hockey, rugby league, rugby union, handball, basketball, baseball, Australian rules football, American Football, and volleyball). Synthesis of findings from the study contributed to the construction of a five-domain model explaining attainment of a senior professional level in team sport, the 5D Model of Elite Attainment in Team Sports. The 5D model comprises: Domain Specific Role Demands, Dynamic Development, Drive Climate, Demography & Design, and Demonstrated Contextual Expertise. This represents the first cross-team sport, multi-country synthesis to integrate physical, psychological, developmental, demographic, and contextual predictors into a unified evidence-derived model of progression to senior elite attainment. Across studies, predictive factors mapped coherently onto the 5D model: Domain Specific Role Demands (32 studies): Repeatedly the

most consistent predictors. Superior sprint speed, agility/change of direction, anaerobic power, endurance, and technical skill (e.g., dribbling, decision-making speed, tactical execution) predicted later professional attainment in multiple sports.
Demography & Design (23 studies): Strong relative age and birthplace effects shaped access and progression, although their influence typically weakened at senior levels.
Dynamic Development (13 studies): Growth rates, maturation timing, and developmental trajectories (rather than single time points) differentiated elite vs non-elite groups.
Drive Climate (13 studies): Psychological factors (self-efficacy, goal commitment, challenge-oriented coping, hope for success) predicted youth to adult progression independent of physical performance.
Demonstrated Contextual Expertise (12 studies): Coach ratings, match activity profiles, practice histories, and decision-making quality provided additional predictive value beyond physical testing.

Conclusion

Elite attainment arises from multidimensional, interacting pathways, not isolated qualities. Coaches should consider strategies for long-term development, technical-tactical learning, psychological skills, and late-maturing athletes. Policy should address systemic biases (relative age, birthplace, and early selection) and adopt multidimensional selection and progression processes. The 5D model may support more equitable, evidence-based talent identification and development.

References

Ardern, C. L., Büttner, F., Andrade, R., Weir, A., Ashe, M. C., Holden, S., Impellizzeri, F. M., Delahunt, E., Dijkstra, H. P., Mathieson, S., Rathleff, M. S., Reurink, G., Sherrington, C., Stamatakis, E., Vicenzino, B., Whittaker, J. L., Wright, A. A., Clarke, M., Moher, D., Page, M. J., & Winters, M. (2022). Implementing the 27 PRISMA 2020 statement items for systematic reviews in the sport and exercise medicine, musculoskeletal rehabilitation and sports science fields: The PERSiST guidance. *British Journal of Sports Medicine, 56*, 175–195. https://doi.org/10.1136/bjsports-2021-103987.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *PLOS Medicine, 18*(3), Article e1003583. https://doi.org/10.1371/journal.pmed.1003583



JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Hares, Tortoises, and Falcons: An Exploration of Academy Player Pathway Archetypes Resulting in English Premiership Rugby

Amy Shelley[1,2,3] ,Jamie Taylor[1,2,3] , Áine MacNamara[1,3] , Asma Slaimi[1,4] Michael Scriney[1,4] , Neil McCarthy[5,6] , Ben Jones[5,6,7,8,9] , and Stephen Behan[1,2,3]

[1]School of Health and Human Performance, Dublin City University, Ireland
[2]Insight Research Ireland Centre for Data Analytics, Dublin City University, Ireland
[3]Coaching and Expertise Research Lab, Dublin City University, Ireland
[4]School of Computing, Dublin City University, Ireland
[5]PREM Rugby, England
[6]Carnegie Applied Rugby Research (CARR) Centre, Leeds Beckett University, UK
[7]Department of Human Biology, University of Cape Town, South Africa
[8]School of Behavioural and Health Sciences, Australian Catholic University, Australia
[9]Rugby Football League, Etihad Campus, Manchester, UK

Keywords
rugby union, talent development, player pathways, machine learning

Background
Talent systems aim to facilitate the progression of junior athletes to senior elite levels. Growing evidence suggests that athletes may follow multiple developmental pathways (Gulbin et al., 2013; Verbeek et al., 2025). Identifying and understanding these differential routes through a talent system may enhance the support provided to athletes. It may also be important to consider the athlete characteristics (e.g., relative age) and contextual factors (e.g., academy organisation) associated with the likelihood of following particular developmental pathways.

Aims
This study aimed to accomplish the following: (a) utilise unsupervised cluster analysis to explore patterns of player progression through the male English rugby union talent system leading to the PREM, England's elite domestic league; and (b) examine differences in relative age, playing position, academy organisation, and PREM club across player pathway archetypes.

Methods
Developmental trajectories of 407 male ex-academy rugby union players who progressed to the PREM were examined using academy administrative and match appearance data. Player pathways were mapped based on the timing of 'England Academy Player' (EAP) nomination and match appearances in Tier 2 and Tier 3 leagues prior to PREM debut. Hierarchical and K-means cluster analyses were used to group developmental trajectories based on stage inclusion and duration. Chi-squared analyses tested differences in academy organisation, club organisation, playing position, and birth quartile across clusters.

Results
Three progression archetypes emerged: Hares, Tortoises, and Falcons. Pathway variables significantly differed across clusters ($p < .001$), supporting the distinctiveness of the profiles. The Hares archetype

was characterised by the earliest EAP identification, the Tortoises archetype by the longest duration from initial EAP nomination to PREM debut (M = 5.05, SD = 1.48 seasons), and the Falcons archetype by the absence of junior academy EAP data, suggesting late nomination. Significant associations were observed between archetype and playing position ($\chi^2(16) = 28.041$, $p = .031$), academy organisation ($\chi^2(26) = 54.346$, $p < .001$), and PREM club ($\chi^2(24) = 41.466$, $p = .015$). Birth quartile was not significantly associated with archetype ($\chi^2(6) = 9.772$, $p = .135$), although a significant linear trend was observed ($\chi^2(1, N = 407) = 6.497$, $p = .011$).

Discussion

Broad positional groupings ('forwards' vs 'backs') were not associated with progression archetypes, although some specific playing positions were. This suggests greater nuance may be required when considering positional developmental demands (Owen et al., 2022). Both academy and PREM club organisations were significantly associated with archetype, indicating that organisational contexts may shape player development pathways (Shelley et al., 2025). Although relative age was not significantly associated with archetype overall, relatively younger players were significantly less likely to follow the Hares pathway. This highlights the potential importance of designing talent systems that facilitate multiple entry and progression routes (Till et al., 2020).

Conclusion

These findings have important implications for the design of the English rugby union talent system and the ways in which players are supported throughout development. Specifically, the findings highlight the need to consider how both player characteristics and organisational contexts influence pathways to senior elite performance.

References

Gulbin, J., Weissensteiner, J., Oldenziel, K., & Gagné, F. (2013). Patterns of performance development in elite athletes. *European Journal of Sport Science, 13*(6), 605–614. https://doi.org/10.1080/17461391.2012.756542.

Owen, C., Till, K., Phibbs, P., Read, D. J., Weakley, J., Atkinson, M., Cross, M., Kemp, S., Sawczuk, T., Stokes, K., Williams, S., & Jones, B. (2022). A multidimensional approach to identifying the physical qualities of male English regional academy rugby union players; considerations of position, chronological age, relative age and maturation. *European Journal of Sport Science*, 1–11. https://doi.org/10.1080/17461391.2021.2023658.

Shelley, A., MacNamara, Á., Behan, S., McCarthy, N., Jones, B., & Taylor, J. (2025). No solutions, only trade-offs: An exploration of contextual factors influencing rugby union talent development environments. *Journal of Sports Sciences*, 1–12. https://doi.org/10.1080/02640414.2025.2486884.

Till, K., Barrell, D., Lawn, J., Lazenby, B., Rock, A., & Cobley, S. (2020). 'Wide and emergent–narrow and focused': A dual-pathway approach to talent identification and development in England rugby union. In J. Baker, S. Cobley, & J. Schorer (Eds), *Talent identification and development in sport* (Second). Routledge.

Verbeek, J., Niessen, A. S. M., Van Der Steen, S., Van Yperen, N. W., & Den Hartigh, R. J. R. (2025). Career patterns within men's and women's soccer talent systems: The typical pathway to the top is atypical. *International Journal of Performance Analysis in Sport*, 1–17. https://doi.org/10.1080/24748668.2025.2479940

Coaches' Experiences of the (De)Selection Process in Academy Soccer

Pat Oakes, David Grecic, and Matthew J. Reeves
Centre for Applied Sport, Physical Activity, and Performance, University of Lancashire, UK

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
talent, coaching, scouting, selection, barriers

Background
The secretive nature of academy football (soccer) in England has restricted knowledge of talent identification processes (Larkin & Reeves, 2018). While research has been conducted into how coaches and scouts assess talent, there is little work exploring the wider context of talent identification in academy football and the influences on talent selection within it (Reeves et al., 2018). Previous research has revealed the functions and outcomes of (de)selection processes in academy soccer (Hill et al., 2020; Kite et al., 2023). Further research is required to better understand the factors which influence these processes.

Aims
This study aims to explore coaches' knowledge, experiences, and beliefs on current practices in talent identification and (de)selection in academy soccer to access new perspectives and contribute to an improved understanding of the realities of talent identification practices. The study aims to provide greater context to the decisions taken by coaches in the (de)selection process (Roberts et al., 2021).

Methods
Data were generated from a study investigating current practices in talent identification and selection in English academies, learning from coaches' experiences in category 1, 2, and 3 academies from the Premier League and Football League. Semi-structured interviews were conducted with $n = 12$ professional football coaches working at EPPP academies with the aim of exploring their experiences of the TI process and the factors which influence (de)selection decisions beyond coaches' evaluations of players' talent.

Findings
Before reaching the academy environment, grassroots coaches, grassroots league organisers, and academy scouts all make pre-selection decisions, determining the pool from which academy coaches can identify suitable talents. Within the academy, coaches' enactment of their beliefs and preferences influence (de)selection decisions. The influence of figures who hold power within the club leads to players being signed, retained, and released for political reasons. Upon graduating from the academy, players' fortunes are highly dependent on the state of the first team squad's performance and managerial situation. The knowledge that coaches possess varies at different levels of academy soccer, as does that of their colleagues, leading to comproamised decisions on talent.

Conclusion
A disconnect exists between research and practice in talent identification in academy soccer environments. The constraints of knowledge, finances and structures in which coaches operate often prevents them from following a model of perceived best practice, with coaches regularly making

compromises in performing the role. Developing practitioner knowledge across the talent identification process would improve the quality of decisions and allow coaches to maximise their resources. Improving the connection between scouting and coaching, developing a clear strategy based on the specific environment and requirements of the club, and prioritising talent identification resources to align with the club's aims would also support greater quality and consistency of decisions. While the present study provides practical context to current understanding of talent identification and (de)selection in academy soccer, further research is needed to bridge the gap between research and practice.

References

Hill, M., Scott, S., Malina, R. M., McGee, D., & Cumming, S. P. (2020). Relative age and maturation selection biases in academy football. *Journal of Sports Sciences, 38*(11/12), 1359–1367.

Kite, R. J., Noon, M. R., Morris, R., Mundy, P., & Clarke, N. D. (2023). Observations of player (de)selection within a professional UK soccer academy. *Journal of Science in Sport and Exercise, 6*, 71–80. https://doi.org/10.1007/s42978-023-00222-3

Larkin, P., & Reeves, M. J. (2018). Junior-elite football: Time to re-position talent identification? *Soccer and Society, 19*(8), 1183–1192. https://doi.org/10.1080/14660970.2018.1432389

Reeves, M. J., Roberts, S. J., McRobert, A. P., & Littlewood, M. A (2018). Factors affecting the identification of talented junior-elite footballers: A case study. *Soccer and Society, 19*(8), 1106–1121. https://doi.org/10.1080/14660970.2018.1432383

Roberts, S. J., McRobert, A. P., Rudd, J., Enright, K., & Reeves, M. J. (2021). Research in another un-examined (RAE) context. A chronology of 35 years of relative age effect research in soccer: Is it time to move on? *Science & Medicine in Football, 5*(4), 301–309.



JoE

The Role of Biological Maturation and Relative Age in Player Selection During Transition Phases at a German Youth Soccer Academy

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Johannes Jäger[1], Michael C. Rumpf[1] , Rhodri S. Lloyd[2] , Aaron Uthoff[3], and Matthias Lochmann[1]

[1]Department of Sport and Exercise Medicine, Institute of Sport Science and Sport, Friedrich-Alexander-University, Germany
[2]Youth Physical Development Centre, Cardiff Metropolitan University, Wales, UK
[3]Sport Performance Research Institute New Zealand, AUT-University, New Zealand

Keywords
selection, deselection, youth academy, bias

Background
It has been determined that biological maturation and relative age are both factors that influence player selection in youth soccer academy settings (Towlson et al., 2022). It has been demonstrated that, in particular with the onset of adolescence, both selection biases become more prominent in selection decisions (Hill et al., 2020). These decisions are primarily conducted during the transition phases between seasons of subsequent age groups. Nevertheless, the magnitude of both selection biases in a German youth academy has been under-investigated. Furthermore, recent literature suggesting distinct pathways for both biases urges the need for a deeper understanding within an academic context (Curnyn et al., 2025; Sweeney et al., 2023).

Aim
This study aimed to investigate the influence of biological maturation and relative age on player selection during transition phases in a German youth soccer academy. Additionally, it examined the extent to which biological maturation and relative age were associated among selected players.

Methods
A total of 176 male soccer players (U12–U15), competing in the highest age-specific league within a German youth soccer academy, were assessed for relative age and biological maturation across four assessment sessions per season between 2020/21 and 2024/25. Selection into the subsequent age group was predicted using logistic regression models, while associations between biological maturation and relative age were examined using Spearman's rank correlation.

Results
Regression analyses revealed a significant maturity-related selection bias across all age groups, with the strongest effects observed during transitions from U14 to U15 (OR = 1.97, p = .045) and from U15 to U16 (OR = 1.76, p = .044). Relative age was not a significant predictor of selection into the subsequent age group. Moderate negative correlations between relative age and biological maturation were observed among selected players at U12 and U13 (r = −0.33 to −0.47), whereas only small correlations were found at U14 and U15 (r = −0.20 to −0.25).

Conclusion

These findings indicate that selection biases in this academy context are primarily driven by biological maturation rather than relative age, particularly during transition phases after U14 and U15. Moreover, the small to moderate associations between biological maturation and relative age support existing evidence that these factors do not develop in parallel and should not be interpreted interchangeably within talent development pathways.

References

Curnyn, S., Leslie, M., Palmer, D., Williams, S., & Cumming, S. (2025). The influence of relative age and biological maturation on player selection in the Scottish football associations Club Academy Scotland. *Journal of Sports Sciences, 43*(18), 1980–1991. https://doi.org/10.1080/02640414.2025.2527436

Hill, M., Scott, S., Malina, R. M., McGee, D., & Cumming, S. P. (2020). Relative age and maturation selection biases in academy football. *Journal of Sports Sciences, 38*(11-12), 1359–1367. https://doi.org/10.1080/02640414.2019.1649524

Sweeney, L., Cumming, S. P., MacNamara, Á., & Horan, D. (2023). A tale of two selection biases: The independent effects of relative age and biological maturity on player selection in the Football Association of Ireland's national talent pathway. *International Journal of Sports Science & Coaching, 18*(6), 1992–2003. https://doi.org/doi.org/10.1177/17479541221126152

Towlson, C., MacMaster, C., Parr, J., & Cumming, S. P. (2022). One of these things is not like the other: Time to differentiate between relative age and biological maturity selection biases in soccer? *Science and Medicine in Football, 6*(3), 273–276. https://doi.org/10.1080/24733938.2021.1946133

Building Opportunities: What a Newly Formed Women's Football Team Reveals about People, Places, and Possibilities

Laura Finnegan
Football Research Group, South East Technological University, Ireland

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
football, development, women, talent

Background
The growth of women's football has not removed the unevenly resourced realities of participation, where many players continue to combine elite training with paid work, education, and other responsibilities. Research on dual-career demands in elite women's football has shown how players must negotiate substantial role strain across sport, work, and education (Harrison et al., 2022). Research on the professionalisation of women's football further suggests that progress can coexist with insecurity, unequal support, and gendered organisational practices that shape everyday playing and working conditions (Culvin, 2023). The development of women's football requires political, economic, and cultural support (Wang et al., 2025), yet empirical evidence from newly professionalising leagues, particularly multi-level stakeholder and player-informed accounts, remains limited. The Women's Premier Division in Ireland (WPD) represents an underexamined developmental context where such evidence is urgently needed.

Aim
This study examined the lived experiences of WPD players, with particular attention to multiple role-holding, organisational stressors, and transition demands. A secondary aim explored club governance and administrator perspectives on the opportunities and challenges of building and supporting women's football within League of Ireland clubs. More broadly, the study examines how opportunity in women's sport is shaped by people, places, and institutional possibilities.

Methods
A mixed-methods design was employed across a total sample of 110 participants. Semi-structured interviews were conducted with club personnel (n=12) and players (n=5) within a newly established women's team competing in the WPD, complemented by an online survey of WPD players (n=86) and qualitative insights from strategic apex personnel across seven other WPD clubs. Qualitative data were analysed thematically and integrated with descriptive survey findings to generate a multi-level account of player experience, club functioning, and development priorities.

Results & Findings
Participation in the WPD is shaped by intersecting pressures across football, employment, education, and health. Most players reported limited financial return from football, with 71% indicating that they did not receive more than the expenses incurred through participation and 55% earning less than €2,000 annually. Alongside this, 68% held additional employment and 55% were engaged in further study. More than half reported that injury had affected their capacity to work, and over half indicated that they would consider early voluntary exit due to the cumulative pressures associated with playing.

Qualitative findings highlighted how development was shaped by people (player and administrator relationships, priorities, and perceptions of value), places (club environments, visibility, legitimacy, and uneven welfare provision), and possibilities (the extent to which players could sustain participation, progress, and imagine longer-term futures in the game within existing structures). Administrator accounts further revealed tensions around sponsorship, fanbase development, and the challenge of building women's football within historically male-dominated club structures.

Conclusion

These findings show that opportunities and development in women's football are shaped not only by player commitment and capability, but by the people, places, and institutional possibilities that surround participation. Practically, the findings point to the need for governing bodies and clubs to address structural conditions, including financial support, welfare provision, and organisational culture, as prerequisites for equitable and sustainable talent development. In line with wider research on dual careers and uneven professionalisation, the study argues that reimagining development in women's sport requires environments that are more visible, supportive, and structurally enabling for players at all stages of their careers.

References

Culvin, A. (2023). Football as work: The lived realities of professional women footballers in England. *Managing Sport and Leisure, 28*(6), 684–697. https://doi.org/10.1080/23750472.2021.1959384.

Harrison, G. E., Vickers, E., Fletcher, D., & Taylor, G. (2022). Elite female soccer players' dual career plans and the demands they encounter. *Journal of Applied Sport Psychology, 34*(1), 133–154. https://doi.org/10.1080/10413200.2020.1716871.

Wang, S., Shen, M., Li, P., & Liu, H. (2025). Factors related to the success in women's football: A systematic review. *Frontiers in Sports and Active Living, 7*.



Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Age at Menarche and Long-term Athletic Performance in Female Athletes Across Sports

Babet B. A. Bekhuis[1,3,4] , Marije T. Elferink-Gemser[3,4] , Alex H. Roberts,[2] Daniel Chalkley,[1] and Gert-Jan Pepping[1]

[1]School of Behavioural and Health Sciences, Australian Catholic University, Australia
[2]Talent and Coaching, Queensland Academy of Sport, Australia
[3]Department of Human Movement Sciences, Faculty of Medical Sciences, University of Groningen, the Netherlands
[4]University Medical Center Groningen, the Netherlands

Keywords
menarche, long-term sport performance, female athlete, development, biological maturation

Background
Reaching high levels of sports performance involves a long and complex developmental process shaped by multiple interacting factors. Among many talent development models, maturation is seen as a key factor in athlete development. In female athletes, menarche is an important maturational milestone. Its timing varies substantially between individuals and is associated with hormonal changes that may affect performance-related characteristics such as body size, body composition, and musculoskeletal development. As a result, age at menarche may influence how personal performance characteristics align with sport-specific task demands, and therefore long-term sports performance. Although evidence across multiple sports remains limited and inconclusive, existing research in swimming has shown that later menarche is associated with better adolescent performance. In all these studies, online questionnaires were used to determine age at menarche. Such retrospective research designs depend on athletes being able to recall the events related to the onset of their menstrual cycle.

Aim
The current study investigated the ability of female athletes to recall age at menarche and menstrual cycle regularity. The study forms part of an overarching research project that aimed to explore the relationship between age at menarche and long-term sports performance in Australian female athletes across different sports.

Methods
Data were collected through an online questionnaire (REDCap). Snowball sampling was used to recruit Australian female athletes aged 18 years or older currently or previously competing in organised sport. Ability to recall age at menarche (AM) was part of the inclusion criteria. Participants were asked to report AM and when their menstrual cycle became regular (MCR). Relevant for the current presentation, the ability to recall AM and MCR were measured using a visual analogue scale (VAS) that ranged between 0 and 100.

Results
To date, 32 participants have been included with an average age of 24.4 years (*SD* = 4.4), and their mean AM was 13.2 years (*SD* = 1.9), ranging from 9 to 17 years. Of the included participants 17/32 (53.1%)

reported a VAS AM > 90 (20/32 >80; 24/32 >70; 28/32 > 60; 1/32 > 50; 2/32 > 40; 1/32 > 10). One participant reported a VAS AM of 11. In terms of VAS MCR, 7/32 > 90; 13/32 > 80; 17/32 > 70; 22/32 > 60; 24/32 > 50; 25/32 > 40; 27/32 > 30; 28/32 > 20; 29/32 > 10; 3/32 > 0. Three participants reported VAS MCR smaller than 10.

Conclusion

Preliminary results suggest that retrospective collection of age at menarche in Australian female athletes is feasible. Participants were generally able to recall their age at menarche with a relatively high degree of certainty. Recall of menstrual regularity appeared more variable. Further preliminary results indicate possible differences in age at menarche across sport categories, but the current sample size and uneven sport distribution do not yet allow meaningful reporting and firm conclusions.

References

Anjos, M. M., Braga, C., & Cruz-Ferreira, A. M. (2024). Impact of sports on female growth and pubertal development: a cohort study. *Cureus, 16*(12).

Athayde, M. S. d. S., Kons, R. L., Fukuda, D. H., & Detanico, D. (2021). Body size measurements and physical performance of youth female judo athletes with differing menarcheal status. *International Journal of Environmental Research and Public Health, 18*(23), 12829.

Cornett, A. C., Wagner, S., Duski, A., Wright, B. V., & Stager, J. M. (2017). Maturational timing and swim performance in collegiate female swimmers. *Journal of Swimming Research, 25*(1), 11–19.

Cumming, S. P., Lloyd, R. S., Oliver, J. L., Eisenmann, J. C., & Malina, R. M. (2017). Bio-banding in sport: Applications to competition, talent identification, and strength and conditioning of youth athletes. *Strength & Conditioning Journal, 39*(2), 34-47.

Elferink-Gemser, M. T., & Visscher, C. (2013). Who are the superstars of tomorrow? Talent development in Dutch soccer. In J. Baker, S. Cobley, & J. Schorer (Eds.), *Talent identification and development in sport* (pp. 115–125). Routledge.

López-Plaza, D., Alacid, F., Abellán-Aynés, O., & Quero-Calero, C. D. (2025). Menarche as maturational factor in young swimmers' development of morphological, physical and performance characteristics over a year of training. *Medicine and Science in Sports and Exercise, 57*(10).

Opstoel, K., Pion, J., Elferink-Gemser, M., Hartman, E., Willemse, B., Philippaerts, R., Visscher, C., & Lenoir, M. (2015). Anthropometric characteristics, physical fitness and motor coordination of 9 to 11 year old children participating in a wide range of sports. *PLoS One, 10*(5), e0126282.

Pion, J., Segers, V., Fransen, J., Debuyck, G., Deprez, D., Haerens, L., Vaeyens, R., Philippaerts, R., & Lenoir, M. (2015). Generic anthropometric and performance characteristics among elite adolescent boys in nine different sports. *European Journal of Sport Science, 15*(5), 357–366.

Post, A. (2024). *Demystifying swimming talent*. [Unpublished doctoral thesis]. University of Groningen.

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Unequal Lanes: Club Size and Relative Age Effect in Participation and Continued Participation at the Dutch Junior Swimming Championships

Wouter van Diepen[1,3], Ruud H. Koning[2], Annemieke S. Beute[3], Chris Visscher[1], and Marije T. Elferink-Gemser[1]

[1]Department Human Movement Sciences, University of Groningen, the Netherlands
[2]Department of Economics, Econometrics & Finance, University of Groningen, the Netherlands
[3]Royal Dutch Swimming Federation (KNZB), Nieuwegein, the Netherlands

Keywords
sports, talent development, competition, athletes, adolescents

Background
The environment plays an important role in talent development (Henriksen & Stambulova, 2017). Athletic performance and long-term development are shaped by individual characteristics in the social and organizational context in which athletes train and compete (Elferink-Gemser & Visscher, 2012). Structural factors including club size and athletes' relative age may influence opportunities for competition participation and continued engagement. These factors may affect whether swimmers qualify for the Dutch Junior Swimming Championships (NJK), the highest podium for Dutch swimmers aged 12-16, and whether they participate in subsequent years (i.e., continued participation). Competing here is a key milestone, while continued involvement indicates growth. Understanding how environmental characteristics shape (continued) participation provides insight into talent development pathways in youth swimming.

Aim
To map the competitive landscape of Dutch youth swimming and examine how structural factors, specifically club size and relative age, are associated with participation and continued participation in the Dutch Junior Championships (NJK).

Methods
Data on Dutch swimming clubs regarding the number of youth members aged 12–15 were obtained from the Dutch National Swimming Federation and categorized by club size: large (>50 12-15yr youth members), medium (25–49), small (10–24), and very-small (<10). Participation data of swimmers aged 13–15 at the NJK 2024 were retrieved, with continued participation assessed in 2025. Associations between club size and participation, as well as continued participation at the NJK, were analysed using Cochran–Armitage trend tests. Relative age effects (RAE) of NJK participants were examined for the total group and by club size by comparing observed birth-quartile distributions with uniform expectations using Chi-square goodness-of-fit tests. Differences in continued participation across quartiles were analysed with Chi-square tests of independence. Analyses were conducted separately for boys and girls; significance was set at $p <. 05$.

Results

The Netherlands hosts 340 swimming clubs, with 292 having youth swimmers (large: $n = 8$; medium: $n = 62$; small: $n = 147$; very-small: $n = 75$), comprising 5194 members aged 12–15. Regarding participation, the NJK participants represented 6 large ($n = 84$ swimmers), 35 medium ($n = 147$), 26 small ($n = 50$), and 9 very-small ($n = 14$) clubs. Within the group of youth swimmers, older swimmers were overrepresented in both sexes, demonstrating significant RAE (boys: $\chi^2 = 1\ 3.40$, $p = 0.004$; girls: $\chi^2 = 31.84$, $p < 0.001$). Within club-size categories, pronounced RAE appeared primarily among girls in large clubs, whereas RAE was less apparent among boys and in smaller clubs. Regarding continued participation, for boys, a negative trend indicated that swimmers from smaller clubs were less likely to continue participation the following year ($Z = -2.84$, p=0.005), while no trend was observed for girls ($Z = -0.35$, $p = 0.73$). Continued participation did not differ across birth quartiles for boys ($\chi^2 = 1.29$, $p = 0.73$) or girls ($\chi^2 = 2.67$, $p = 0.45$).

Conclusion

Club size is related to continued participation in the NJK among male swimmers, with those from smaller clubs less likely to continue. Older athletes are overrepresented among participants of both sexes. RAE is most pronounced among female swimmers in large clubs but does not seem to affect continued participation. Swimming federations and clubs can consider strategies to mitigate relative age effects, thereby promoting more equitable participation and long-term engagement.

References

Henriksen, K., & Stambulova, N. (2017). Creating optimal environments for talent development: A holistic ecological approach. In J. Baker, S. Cobley, J. Schorer, & N. Wattie (Eds.), Routledge handbook of talent identification and development in sport (pp. 271–284). Routledge. https://doi.org/10.4324/9781315668017-19.

Elferink-Gemser, M. T., & Visscher, C. (2012). Who are the superstars of tomorrow? Talent development in Dutch Soccer. In J. Baker, S. Cobley, & J. Schorer (Eds.), Talent and development in sport: International perspectives (1e ed., pp. 95-105). Taylor and Francis Group.

JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Visual Search Strategies and Decision-making in Highly Trained Female Youth Basketball Players: A Quasi-experimental In Situ Study of Gaze Behaviour During Pick-and-roll Plays

Kazimierz Mikolajec[1], Pedro T. Esteves,[2] Jorge Arede,[3] Rui Zhou[4], and Nuno Leite[3]

[1]Jerzy Kukuczka, Academy of Physical Education, Poland
[2]Guarda Polytechnic University, Portugal
[3]Department of Sports, Exercise and Health Sciences, University of Tras-os-Montes and Alto Douro, Portugal
[4]School of Sports Management and Communication, Capital University of Physical Education and Sports, China

Keywords
team sports, visual perception, tactical behavior, adolescence, invasion sports

Background
Decision-making ability is considered one of the core elements influencing basketball performance (Esteves et al., 2011). Gaze behaviour has been widely studied as an important tool for understanding perception–decision mechanisms (Kredel et al., 2017; Mann et al., 2009). However, research on gaze behaviour in complex tactical situations (such as the pick-and-roll) remains limited, particularly in youth athletes. Given that the pick-and-roll is a representative tactical situation in basketball and heavily relies on decision-making and coordination, this study uses a pick-and-roll task as an experimental scenario to examine how athletes use visual information to make tactical decisions (Bismpos & Karamousalidis, 2022).

Aim
(1) To describe the gaze behaviour of the ball handler in a side pick-and-roll task and to examine changes in visual attention patterns under different task outcomes and defensive conditions; (2) to analyse gaze strategies associated with different offensive decisions and to explore the relationship between perception and action in tactical decision-making.

Methods
Twelve right-handed U16 high-level female basketball players (14.73 ± 0.85 years) participated in a 4v4 side pick-and-roll task. Four defensive strategies were implemented: Under, Over, Show, and Over with Double Team. The ball handler's gaze behaviour was recorded using a mobile eye-tracking system. Nine dynamic areas of interest (AOIs) were defined, including the screener/roller (SR), defenders, basket, ball, and free space. Offensive decisions were categorised into five types: Shoot, Drive, Pass to Roller, Pass to Corner, and No Decision. Statistical analyses included chi-square tests, Kruskal–Wallis tests, Friedman tests, entropy analysis, time-series analysis, and first-order Markov transition matrix analysis.

Results
A chi-square test revealed a significant association between defensive strategy and offensive decision ($\chi^2 = 486.46$, $p<0.001$, Cramér's V = 0.382). Under the Under and Over defensive conditions, passing to the corner was more frequent, while shooting occurred more often than expected under the Under defence.

Drive actions increased significantly under the Show strategy, whereas Pass to Roller was most frequent under the Over with Double Team condition. Execution time differed significantly across defensive strategies and decision types. In 126 valid trials, the final fixation corresponded to the offensive decision in 114 cases (90.5%). Time-series analysis showed that fixations on the selected area of interest (AOI) increased markedly during the final phase of each trial. Pass to Roller was characterised by earlier gaze anchoring, whereas Shoot and Drive showed later fixation patterns. Drive involved broader visual scanning, while Shoot and Pass were associated with more focused gaze behaviour. The SR emerged as the primary source of visual information across task conditions.

Conclusion

Youth female basketball players adapt their gaze behaviour and offensive decisions according to different defensive conditions. These findings support the use of in situ eye-tracking as a valuable tool for understanding perceptual and decision-making processes in youth basketball and highlight the importance of developing decision-making skills within representative task environments.

References

Esteves, P. T., De Oliveira, R. F., & Araújo, D. (2011). Posture-related affordances guide attacks in basketball. *Psychology of Sport and Exercise, 12*(6), 639-644.

Kredel, R., Vater, C., Klostermann, A., & Hossner, E. J. (2017). Eye-tracking technology and the dynamics of natural gaze behavior in sports: A systematic review of 40 years of research. *Frontiers in Psychology, 8*, 287392.

Mann, D. L., Farrow, D., Shuttleworth, R., Hopwood, M., & MacMahon, C. (2009). The influence of viewing perspective on decision-making and visual search behaviour in an invasive sport. *International Journal of Sport Psychology, 40*(4), 546-564.

Bismpos, M., & Karamousalidis, G. (2022). The use and efficacy of the offensive action of pick and roll in the Olympic Games of 2020. *Journal of Physical Education and Sport, 22*(10), 2513-2521.

JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Lost in Translation? Exploring the Invariance of Performance Measures Across Ice Hockey Leagues and Sex

Ben Csiernik and Nick Wattie
Faculty of Health Sciences, Ontario Tech University, Canada

Keywords
ice hockey, performance, sex differences, contextual influence

Background
Advanced statistical analysis has become central to player and team evaluation in professional ice hockey, and has led to a greater understanding of key trends in performance (Nandakumar & Jensen, 2019). However, the majority of this work has been conducted using data from professional men, and has not been formally evaluated in women's ice hockey (Csiernik et al., 2025; Farah & Baker, 2021).

Aim
The purpose of this project was to evaluate if established statistical phenomena in men's professional ice hockey are generalizable to a women's collegiate hockey sample. Using data from our expected goals model, we compared: 1) the goals required to earn a point in the standings, 2) the impact of 'scoring luck' (i.e., team shooting percentage + team save percentage) on season standings, 3) whether past scoring, shot attempts, or expected goals best predict future scoring and 4) the impact of score effects on team performance.

Methods
Professional data from the National Hockey League (NHL) was retrieved from Natural Stat Trick, a public third party data provider. Additional data was collected using multiple sources from Canadian collegiate women's ice hockey across three seasons including shot attempts for and against, and goals for and against. A bespoke expected goals model was created using an elastic net logistic regression and more than 30,000 unique shot attempts (29 variables per shot attempt; area under the curve of 0.815). Additionally, Pearson's correlation and simple linear regression were used to answer aims two and three.

Results
Compared to the NHL, which averages 2.73 goals per point earned, women's collegiate hockey requires 2.28 goals per adjusted point. Similar to the NHL ($\underline{r} = 0.75 – 0.80$, $p < 0.01$), collegiate women's hockey sees a very strong correlation between scoring luck and season standings ($r = 0.83$, $p < 0.01$). Similar to previous findings in the NHL, a team's expected goals from the first half of the season more strongly predicts final scoring ($r = 0.90$, $R^2 = 0.81$, $p < 0.01$), than shots on target ($r = 0.84$, $R^2 = 0.71$, $p < 0.01$), and all unblocked shot attempts ($r = 0.77$, $R^2 = 0.59$, $p = 0.01$). Lastly, unlike the NHL, trailing teams do not generate more offensive value (as measured by xG) and do not consistently take more shot attempts than leading teams.

Conclusion

While some statistical trends hold true between the NHL and collegiate women's hockey, the effect sizes and orders of magnitude vary. This may be due to differences in tactical approaches from athletes and coaches, physiological differences, and parity within league. Coaches, evaluators, and other persons of interest should be aware that there is clear contextual influence in the application of performance measures. Though some trends appear consistent in their direction of effect, league specific data and models are needed to best support coaches and evaluators, and coaches should be aware that adopting approaches derived from professional sport may not be appropriate.

References

Csiernik, B., Cavell, M., Nauboris, K., & Wattie, N. (2025). A comparison of shot selection and goal scoring between collegiate and professional women's and men's ice hockey. *Frontiers in Sports and Active Living, 7*. https://doi.org/10.3389/fspor.2025.1648099

Farah, L., & Baker, J. (2021). Accuracy from the slot: Evaluating draft selections in the National Hockey League. *Scandinavian Journal of Medicine & Science in Sports, 31*(3), 564–572. https://doi.org/10.1111/sms.13874

Nandakumar, N., & Jensen, S. T. (2019). Historical perspectives and current directions in hockey analytics. *Annual Review of Statistics and Its Application, 6*, 19–36. https://doi.org/10.1146/annurev-statistics-030718-105202

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Upright with a Pulse: A Practical Example of the Evolution of Decision-making in Talent Identification

Alex Roberts[1,2], Jennifer Hollier[1], Matthew Glossop[1], and Karlee Quinn[1]

[1]Coaching and Talent, Queensland Academy of Sport, Australia
[2]La Trobe University, Australia

Background

In many sports, there are clear physical capacities and capabilities that are essential for elite performance, and much of the research in talent identification has concentrated on understanding which of these metrics may present early in an athlete's development. Particularly for talent detection and talent transfer, there is a general consensus that some generic traits (e.g., upper or lower body explosive power, aerobic fitness, anaerobic capacity) can be used to create a 'profile' that could orient an athlete towards a particular sport or group of sports. Similarly, many coaches and sporting organisations believe they have a good understanding of 'what it takes' to succeed in their sport. However, this is not always the case – in many sporting organisations, coaches/selectors rely on natural selection (i.e. an athlete 'naturally' comes to the sport and progresses based on competition performance), or a subjective opinion of the necessary traits. So how can practitioners help sports to identify future elite athletes, when the sport does not know what they need?

Results

This presentation will share some applied examples of the evolution of decision-making from four years of a large-scale, cross-sport talent detection program. Using the Queensland Academy of Sport's YouFor2032 program as a vehicle, we will discuss how selectors choose athletes based on data alone, and how performance benchmarking for transfer athletes has changed with the support of a specialist talent team and regular athlete intakes.

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Effects of Including Ball or Not During Differential Flywheel Training on Physical and Technical Performance in Youth Female Basketball Players

Rui Zhou[1], Jorge Arede[2], Vasco Barros[2] ,and Nuno Leite[2]

[1]School of Sports Management and Communication, Capital University of Physical Education and Sports, China
[2]Department of Sports, Exercise and Health Sciences, University of Tras-os-Montes and Alto Douro, Portugal

Keywords
motor variability, skill acquisition, motor learning, inter-limb asymmetry, neuromuscular control

Background
Differential learning (DL) facilitates self-organised motor adaptations through the introduction of movement variability and has been proposed as an effective approach for open-skill sports (Schöllhorn, 2000). Recent studies have demonstrated its potential to improve neuromuscular performance and technical skills in youth athletes (Arede et al., 2022). In parallel, flywheel resistance training provides eccentric overload and has been shown to enhance strength and change-of-direction performance (Gonzalo-Skok et al., 2022). However, most DL-based interventions have been implemented under simplified or no-ball conditions, with limited consideration of sport-specific task constraints. In a basketball-specific context, it remains unclear whether including ball-handling tasks within a differential flywheel training framework can enhance technical performance while maintaining physical adaptations.

Aim
This study aimed to compare the effects of including ball and no-ball differential flywheel training on physical and technical performance in youth female basketball players.

Methods
Fifteen youth female basketball players with systematic training experience were allocated to either an including-ball or a no-ball differential flywheel training group using a matched grouping approach. In addition to regular team practice, both groups completed a 6-week differential flywheel training programme (Byomedic System SCP, Barcelona, Spain), performed twice weekly on non-consecutive days. Pre- and post-intervention assessments included 10 m and 20 m sprint performance, the Modified 505 change-of-direction (COD) test, bilateral and unilateral countermovement jumps (CMJ) with asymmetry indices, and a standardised dribbling test. Within-group changes were analysed using Bayesian paired-samples t-tests, while between-group differences and interaction effects were examined using Bayesian repeated-measures ANOVA. Bayes factors (BF_{10}) and standardised effect sizes (δ) were reported.

Results
Both groups showed improvements in 10–20 m and 0–20 m sprint performance, with no meaningful changes observed in the initial acceleration phase (0–10 m). Change-of-direction (COD) performance

improved primarily in the left direction, whereas improvements on the right side were limited, indicating direction-specific adaptations. Jump performance showed only trivial to anecdotal changes in most CMJ variables. Notably, moderate evidence for improvement in right-leg CMJ performance was observed only in the including-ball group. No clear time × group interaction effects were found for sprint, COD, or jump variables, suggesting similar physical adaptations between conditions. In contrast, the including-ball group demonstrated a tendency towards greater improvements in technical (dribbling) performance, although the evidence for an interaction effect remained inconclusive.

Conclusion

Six weeks of differential flywheel training were associated with improvements in later-phase sprint performance and change-of-direction ability in youth female basketball players, while effects on initial acceleration and jump performance were limited. Including ball during training showed a tendency towards greater improvements in technical performance, without clear additional benefits for physical outcomes. Incorporating ball-related constraints may therefore enhance sport-specific relevance without compromising physical adaptations.

References

Schöllhorn, W. I. (2000). Applications of systems dynamic principles to technique and strength training. *Acta Academiae Olympiquae Estoniae, 8*(1), 67–85.

Arede, J., Fernandes, J. F. T., Schöllhorn, W. I., & Leite, N. (2022). Differential repeated sprinting training in youth basketball players: An analysis of effects according to maturity status. *International Journal of Environmental Research and Public Health, 19*(19), 12265.

Gonzalo-Skok, O., Tous-Fajardo, J., Suarez-Arrones, L., & Arjol-Serrano, J. L. (2022). Effects of eccentric overload training on strength and change of direction performance: A systematic review. *International Journal of Sports Physiology and Performance, 17*(3), 1–10.

Curriculum Knowledge as a Feature of Talent Development Coach Expertise

Jamie Taylor[1,2], Alan Burns[1,3], and Michael Ashford[3]

[1]CoEx|Lab, Dublin City University, Ireland
[2]School of Health and Human Performance, Dublin City University, Ireland
[3]Insight SFI Centre for Data Analytics, Dublin City University, Ireland

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
talent development environment, coach development, coaching research, coaching knowledge

Background
Despite extensive research on talent development environments, defined as "all aspects of the coaching situation" (Martindale et al., 2005, p. 354), and on athlete curricula, understood as the pathway experiences of athletes as they progress (Taylor & Collins, 2020), there has been relatively limited research on the role of the coach within talent development, despite extensive practical interest (UK Sport, 2020). This presentation examines the role of the coach within talent development by exploring phase-specific demands of coaching across the Foundation Phase, Youth Development Phase, and Professional Development Phase of academy football. In doing so, it considers how talent development coaches shape the experiences of players in the present in ways intended to support their later developmental trajectory.

Methods
Drawing on data from the Premier League academy coaching expertise project, the presentation brings together findings from a co-produced, multi-year programme of naturalistic case studies examining coaching expertise across the Foundation Phase, Youth Development Phase, and Professional Development Phase of Category 1 academy football. Across two years, 18 coaches from 14 academies contributed more than 100 hours of Cognitive Task Analysis interviews and 27 days of observation, generating representations of phase-specific coaching demands.

Findings
The presentation focuses on three interlinked demands across the talent system. In the Foundation Phase, laying lifelong foundations refers to the difficulty of judging what constitutes an appropriate developmental diet for players when the qualities that support later progression are not yet visible. In the Youth Development Phase, balancing now with later refers to the challenge of pursuing long-term development while responding to immediate concerns such as selection and contracts, particularly when judging readiness requires an understanding of evolving first-team demands. In the Professional Development Phase, thinking about today vs tomorrow refers to the need to judge when to emphasise immediate performance and when to privilege longer-term development, given that excessive focus on results can undermine learning, while disregard for performance can damage credibility and player motivation (e.g., Dowling et al., 2018). Across these demands, a common feature of coaching expertise is the projection and sequencing of developmental experience based on present needs and future demands. This can be understood through the lens of curriculum knowledge (Barry et al., 2025).

Conclusion

With the aim of bringing talent and pedagogical research into closer dialogue, the presentation considers what these findings mean for talent development coaches and coaching. It will argue that curriculum knowledge deserves greater attention as a feature of coaching expertise, extending existing notions of coaching decision making, while also considering the organisational and professional barriers that may limit coaches' opportunities to develop such knowledge.

References

Barry, G., MacNamara, Á., & Taylor, J. (2025). Performance vs. development coaching? Considering practice in domains of practice: a research-informed framework. *Sports Coaching Review*, 1–20. https://doi.org/10.1080/21640629.2025.2485662.

Dowling, C., Reeves, M. J., Littlewood, M. A., Nesti, M., & Richardson, D. (2018). Developing individuals whilst managing teams: Perspectives of under 21 coaches within English Premier League football. *Soccer & Society*, 1–16. https://doi.org/10.1080/14660970.2018.1432381.

Martindale, R. J., Collins, D., & Daubney, J. (2005). Talent development: A guide for practice and research within sport. *Quest, 57*(4), 353–375. https://doi.org/10.1080/00336297.2005.10491862.

Taylor, J., & Collins, D. (2020). The highs and the lows: Exploring the nature of optimally impactful development experiences on the talent pathway. *The Sport Psychologist, 34*(4), 319–328. https://doi.org/10.1123/tsp.2020-0034.

UK Sport. (2020). UK Sport Coach Development Team and EIS Performance Pathway Coaching Position Statement. https://www.uksport.gov.uk/news/2020/12/02/coaching-pathway-position-statement



From Theory to Practice: Conceptualisation of the Micro-structure of Swim Training

Ingeborg Ljødal
Department of Physical Performance, Norwegian School of Sport Sciences, Norway

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
ecological dynamics, micro-structure, coaching, bridging theory and practice

Background
Talent development in swimming has often been guided by linear, prescriptive pathways that assume uniform progression and emphasise early specialization (Allen et al., 2015; Ericsson et al., 1993; Morais et al., 2017). Rather than reflecting individual potential, these approaches mirror "optimal-model" assumptions about how athletes *should* develop (Mangalam, 2025). Contemporary perspectives challenge this view, highlighting diverse trajectories and the need to understand performance as emerging from dynamic athlete–environment interactions, self-organisation, and functional variability throughout a swimmer's career (Born et al., 2024; Davids et al., 2017; Güllich & Barth, 2024). Ecological dynamics offer an alternative perspective "re-thinking" the athlete as an self-organised learner and not only a performer (Mangalam, 2025). This theory assumes that development emerges from the interaction of individual, task, and environmental constraints. Based on ecological dynamics, Davids et al. (2017) proposed fourteen dimensions of training to conceptualise the micro-structure of practice within talent development processes. These dimensions capture qualitative aspects extending beyond traditional quantitative metrics and focus on the functionality of the athlete-environment interaction.

Aim
This abstract elaborates on the practical value of conceptualising and measuring the micro-structure of swim training. We propose that these dimensions offer a practical mechanism for understanding athletes' learning environments, thus opportunities for development, and may be transferable beyond swimming.

Methods
A four-round online Delphi study was conducted with 15–21 international experts (English-, French- and Norwegian-speakers). Experts rated each dimension on the conceptual clarity, importance for understanding swim training, inclusion, and wording (Likert scale). Consensus was defined as ≥ 80% agreement. Qualitative comments were analysed and used to guide iterative refinement between rounds.

Results
Twelve of fourteen proposed dimensions reached consensus. The validated dimensions are: structuredness, organisation, supervision, instruction, training plan, inherent enjoyment, intensity, mental effort, volume, variability, specificity and developmental aspects. One dimension, *playfulness*, failed to reach consensus due to persistent conceptual ambiguity across rounds and was therefore excluded. Additionally, *physical effort* did not emerge as a distinct construct and was merged with *intensity* based on expert feedback.

Early consensus was achieved for well-established dimensions such as intensity, specificity, and volume, which were perceived as conceptually clear and highly relevant for understanding swim training. While, more pedagogical and organisational dimensions (e.g., supervision, organisation, and developmental aspects) required additional Delphi rounds, reflecting greater initial variability in interpretation and wording. Overall, the iterative Delphi process resulted in refined operational definitions that improved conceptual clarity and measurability across the validated dimensions.

Conclusion

The Delphi validation operationalised the dimensions proposed by Davids et al. (2017) into measurable constructs. These validated dimensions can offer coaches, clubs and talent programmes with a practical tool for assessing and designing learning environments in line with ecological dynamics. We discuss and propose their use as follows: (1) evaluate micro-structural features across developmental stages; (2) complement macro-level development trajectories with detailed insight to swim training; (3) better understand why swimmers progress, plateau or drop out. This framework represents a shift toward integrating ecological dynamics into daily practice design and offers a generalisable model for athlete development research and applied coaching.

References

Allen, S. V., Vandenbogaerde, T. J., Pyne, D. B., & Hopkins, W. G. (2015). Predicting a nation's Olympic-qualifying swimmers. *International Journal of Sports Physiology & Performance, 10*(4), 431–435. https://doi.org/10.1123/ijspp.2014-0314

Born, D.-P., Stöggl, T., Lorentzen, J., Romann, M., & Björklund, G. (2024). Predicting future stars: Probability and performance corridors for elite swimmers. *Journal of Science and Medicine in Sport, 27*(2), 113–118. https://doi.org/https://doi.org/10.1016/j.jsams.2023.10.017

Davids, K., Güllich, A., Shuttleworth, R., & Araújo, D. (2017). Understanding environmental and task constraints on talent development: Analysis of micro-structure of practice and macro-structure of development histories. In Routledge handbook of talent identification and development in sport (pp. 192–206). Routledge.

Ericsson, K., Krampe, R., & Tesch-Roemer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review, 100*, 363–406. https://doi.org/10.1037//0033-295X.100.3.363

Güllich, A., & Barth, M. (2024). Effects of early talent promotion on junior and senior performance: A systematic review and meta-analysis. *Sports Medicine, 54*(3), 697–710. https://doi.org/10.1007/s40279-023-01957-3

Mangalam, M. (2025). The illusion of internal models in biological movement. *European Journal of Applied Physiology, 125*(11), 3083–3114. https://doi.org/10.1007/s00421-025-05963-3

Morais, J. E., Silva, A. J., Marinho, D. A., Lopes, V. P., & Barbosa, T. M. (2017). Determinant factors of long-term performance development in young swimmers. *International Journal of Sports Physiology & Performance*, *12*(2), 198–205. https://doi.org/10.1123/ijspp.2015-0420



JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Competing with the Boys: The Technical and Physical Demands of Same and Mixed Sex Competition in Elite Youth U12 and U14 Girls' Football

Leila Benyahia, Kevin Thomas, Kirsty Hicks, and David Hendry

Optimising Sport Performance Research Group, Northumbria University, UK

Keywords

mixed-sex competition, technical performance, talent pathways, girls' football, physical performance

Background

Current FA guidelines for girls' talent pathways in England advocate for girls to play football in boys' leagues to enhance their development, though benefits have not yet been quantified. This study examined technical and physical differences between mixed (i.e., vs boys) and same-sex (i.e., vs girls) competition in U12 and U14 girl's academy players.

Method

Players from two girl's professional football Academies (n = 88, age: 11.4 and 13.4 years) participated in the study across the 2024/25-2025/26 seasons. Players wore a foot-mounted inertial measurement unit (Playermaker) that captured physical (total distance, high intensity distance (U12:>3m/s, U14:>4 m/s), sprint distance (U12:>5m/s, U14:>5.5 m/s)) and technical (touches, releases, time on the ball, one touch actions) metrics. U14 matches were 80 minutes, 11v11 format, and 60 minutes of 9v9 format in U12 matches. 66 matches were recorded using a Veo camera, and team technical data (number of possessions, shots, shots on target, successful pass percentage) were tagged and analysed.

Analysis

281 U14 observations (51 players: 90 vs boys, 191 vs girls) and 322 U12 observations (37 players: 198 vs boys, 124 vs girls) were analysed. Separate linear mixed-effects models were used to investigate the effect of opposition gender on physical and technical performance, with player as a random effect and participation time as a covariate. Physical and technical analyses were conducted in R using the nlme package, with maximum likelihood for model comparisons and restricted maximum likelihood for final parameter estimates. Team technical analyses were conducted in R using linear regression models, with team included as a covariate to control for between team differences.

Results

After controlling for participation time, U14's covered significantly greater total distance (5384m vs 4982m, $p = 0.025$), high intensity distance (704m vs 570m, $p<0.001$), and sprint distance (70m vs 46m, $p < 0.001$) vs girls than vs boys. However, they had significantly fewer touches on the ball (62 vs 83, $p < 0.001$), less time on the ball (31s vs 46s, $p < 0.001$), and fewer releases (23 vs 29, $p < 0.001$) vs girls than vs boys. In games vs boys, significantly more shots ($p = 0.008$), shots on target ($p = 0.005$), and successful pass percentage ($p < 0.001$) was found, with no significance on number of possessions or one touch actions ($p > 0.05$).

U12's had significantly more touches in games vs girls than vs boys (71 vs 62, $p < 0.001$). However, vs girls, players covered significantly less high intensity distance (1038m vs 1109m, $p = 0.031$) and sprint distance (49m vs 62m, $p = 0.0015$) than games vs boys. There were no significant effects on distance covered, total time on the ball, one touch actions, releases, shots, shots on target, successful pass percentage or number of possessions ($p > 0.05$).

Conclusion

Data suggest age specific differences when comparing same sex and mixed sex competition. The implications for practice and research are discussed. U14 players may develop their physical abilities when playing against girls and enhance their technical abilities playing against boys. Playing against boys at U12 may enhance the ability to perform longer at higher intensities though most metrics showed no differences. However, opposition skill level was not considered, and should be investigated to confirm if effects are attributed to gender or skill level.

JoE

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Reimagining Talent Development in Professional Football: The Role of a Department of Methodology

Gérard E. Jones[1], Joseph A. Stone[1], Keith Davids[1], and Alliance Kubayi[2]

[1]School of Sport and Physical Activity, Sheffield Hallam University, UK
[2]Department of Sport, Rehabilitation and Dental Sciences, Tshwane University of Technology, South Africa

Keywords

ecological dynamics, talent development, transdisciplinarity, department of methodology, organisational alignment

Background

Professional football organisations have become increasingly complex, with expanding transdisciplinary structures intended to support player development and performance. However, this structural growth has not consistently resulted in organisational coherence, with many clubs continuing to operate through fragmented systems characterised by siloed departments, inconsistent practices, and limited integration across coaching, support, and leadership domains (Relvas et al., 2010). While multidisciplinary approaches are common, transdisciplinarity, defined as the integration of knowledge and practice across domains within a shared framework, has been proposed as a more effective model for aligning practice (Hydes et al., 2026; Otte et al., 2022).

Aim

This study investigated how a Department of Methodology (DoM) could be developed and implemented within a professional football organisation to enhance methodological alignment across coaching practice, transdisciplinary collaboration, and player development pathways.

Methods

Guided by an interpretivist paradigm and relativist ontology, a qualitative single-case study was conducted within a professional football organisation (pseudonym: “North FC”). Data were collected through semi-structured interviews (n = 16), participant observations, field notes, and document analysis. Data were analysed using reflexive thematic analysis to explore how methodology was understood and enacted across coaching, leadership, and performance domains (Braun & Clarke, 2019).

Findings

The study revealed substantial conceptual, structural, and pedagogical misalignment across the organisation. Participants described a lack of shared understanding of methodology, fragmented curriculum and planning processes, inconsistent feedback practices, and limited integration across transdisciplinary teams. Although staff expressed strong commitment to player development, the absence of a coherent epistemological foundation and shared methodological framework constrained the consistency of player experiences. These findings reflect broader organisational challenges in aligning structures, practices, and shared meaning across complex performance environments.

Conclusion

In response, the study proposes a Conceptual Compass Model for Methodology, positioning the DoM as a transdisciplinary organisational integrator that aligns four interrelated domains: epistemological foundations, representative learning design, organisational culture and co-design, and coach learning and feedback processes. Extending existing conceptualisations of a DoM (Otte et al., 2020), the findings indicate that methodological alignment depends not on the presence of frameworks alone, but on the extent to which shared principles, collaborative structures, and everyday practices are coherently integrated across the organisation. Reimagining talent development in professional football therefore requires not only identifying talented players, but designing coherent, transdisciplinary environments capable of supporting player-centred learning and development systems.

References

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589–597.

Hydes, S., Strafford, B. W., Rothwell, M., Stone, J., Davids, K., & Otte, F. (2026). A department of methodology: A feasible framework to integrate the applied practice of multidisciplinary support teams. *International Journal of Sports Science & Coaching*. https://doi.org/10.1177/17479541251409729

Otte, F. W., Rothwell, M., & Davids, K. (2022). Big picture transdisciplinary practice: Extending key ideas of a Department of Methodology towards a wider ecological view of practitioner-scientist integration. *Sports Coaching Review*, *14*(3), 291–314. https://doi.org/10.1080/21640629.2022.2124001

Otte, F. W., Rothwell, M., Woods, C., & Davids, K. (2020). Department of methodology. *Sports Medicine - Open, 6*(1), 55.

Relvas, H., Littlewood, M., Nesti, M., Gilbourne, D., & Richardson, D. (2010). Organizational structures and working practices in elite European professional football clubs: Understanding the relationship between youth and professional domains. *European Sport Management Quarterly, 10*(2), 165–187.

Recipient of Young Investigators Award

Not All Talents Take the Fast Lane: Clustering Youth Football Pathways to Reveal Distinct Developmental Profiles

Laurens Gilson[1], Maarten Slembrouck[1], Matthieu Lenoir[1], Arne Jaspers[2,3], and Nikki Rommers[4]

[1]Department of Movement Sciences, Ghent University, Belgium
[2]Department of Sports, Royal Belgian Football Association, Belgium
[3]Department of Rehabilitation Sciences, KU Leuven, Belgium
[4]Department of Clinical Research, University of Basel, Switzerland

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
talent selection, developmental trajectories, soccer

Background
Objective measures and subjective coach assessments are both currently used in football talent identification (TID), with research highlighting the added predictive value of combining these approaches (Sieghartsleitner et al., 2019; Höner et al., 2021). However, most studies rely on a single binary outcome after several seasons, which overlooks the dynamic and non-linear nature of player development. Youth football careers involve diverse trajectories (Verbeek et al., 2025) including selection, deselection, temporary exits, and re-entries, which are insufficiently captured by single-outcome designs. Understanding how objective and subjective assessments relate to these longitudinal pathways is, therefore, critical for improving TID strategies.

Aim
This study aimed to (1) identify distinct longitudinal developmental trajectories over eight seasons using a clustering approach and (2) examine whether baseline subjective and objective characteristics distinguished phase-specific trajectory clusters.

Methods
In the first season, 357 male elite youth football players (age 9–14) from five Belgian professional academies completed a battery of anthropometric, physical, technical, and motor coordination tests. Coaches also rated each player's current performance and future potential using a 0–100 visual analogue scale. Players' club status (elite vs. non-elite) was tracked over eight consecutive seasons. Developmental trajectories were clustered using dynamic time warping to align temporal sequences and hierarchical clustering to identify groups of players with similar pathways. For phase-specific modelling, 343 players with available clusters were analysed (U10–U12: $n = 212$; U13–U15: $n = 131$). Logistic models contrasted stable elite vs all others and no-re-entry exit vs all others using subjective-only, objective-only, and combined predictor blocks. Model performance was optimism-corrected with bootstrapping.

Results
Four distinct trajectory clusters emerged: (1) stable elite and (2) re-selection to elite leading to elite final status, (3) re-selection but non-elite final status, and (4) persistent non-elite to non-elite final status. Stable elite players showed better baseline physical and motor performance, whereas re-selected elite players started lower. Among non-elite final status players, re-selected players performed slightly better at baseline than persistent non-elite players. In the phase-specific models, combined predictor sets

performed best in 3 out of 4 contrasts and subjective-only models in 1 out of 4. Best optimism-corrected AUCs ranged from 0.63 to 0.70. In U10–U12, coach-rated future potential independently distinguished stable elite (OR 1.93, 95% CI 1.09–3.40) and no-re-entry exit trajectories (OR 0.55, 95% CI 0.32–0.95). In U13–U15, maturity was independently associated with stable elite trajectory (OR 2.31, 95% CI 1.02–5.20), whereas lower coach-rated current performance was associated with no-re-entry exit (OR 0.52, 95% CI 0.28–0.95).

Conclusion

Clustering revealed multiple pathways to elite and non-elite status, uncovering differences in early player profiles that a simple binary outcome would miss. Baseline coach ratings, especially future potential in younger players and maturity/current performance in older players, provide a modest but meaningful signal for differentiating developmental trajectories. These results emphasize that similar long-term outcomes can emerge from distinct early characteristics, highlighting the value of combining trajectory-based outcomes with multidimensional baseline assessment in talent identification.

References

Sieghartsleitner, R., Zuber, C., Zibung, M., & Conzelmann, A. (2019). Science or coaches' eye? - Both! Beneficial collaboration of multidimensional measurements and coach assessments for efficient talent selection in elite youth football. *Journal of Sports Science & Medicine, 18*(1), 32–43.

Höner, O., Murr, D., Larkin, P., Schreiner, R., & Leyhr, D. (2021). Nationwide subjective and objective assessments of potential talent predictors in elite youth soccer: An investigation of prognostic validity in a prospective study. *Frontiers in Sports and Active Living, 3*, 638227. https://doi.org/10.3389/fspor.2021.638227

Verbeek, J., Niessen, A. S. M., Van Der Steen, S., Van Yperen, N. W., & Den Hartigh, R. J. R. (2026). Career patterns within men's and women's soccer talent systems: The typical pathway to the top is atypical. *International Journal of Performance Analysis in Sport, 26*(2), 266–282. https://doi.org/10.1080/24748668.2025.2479940

Recognition for Outstanding Work

Development and Initial Implementation of the Athlete-fit Tool

Bryan McLaughlin[1], Kathryn Johnston2, Magdalena Wojtowicz[3], Joe Baker[2], and Nick Wattie[1]

[1]Faculty of Health Sciences, Ontario Tech University, Canada
[2]Tanenbaum Institute for Science in Sport, University of Toronto, Canada
[3]Department of Psychology, York University, Canada

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
implementation science, person environment fit, talent identification, talent development, tool development

Background
Athlete fit (i.e., the compatibility between an athlete and their developmental/training environment) has been identified by coaches as an important criterion in selection decisions. Research from workplace settings shows that fit can influence areas involving recruitment, retention, job satisfaction and performance, and citizenship behaviour (Abdalla et al., 2019; Kim & Gatling, 2019; Sylva et al., 2019; Verquer et al., 2003). Despite the practical relevance of this concept in sport, athlete fit remains an underdeveloped area, and, to the best of our knowledge, no applied tool exists to assess perceptions of athlete fit for the end-user (i.e., coaches, athletes, decision-makers).

Aim
Guided by the Exploration, Preparation, Implementation, and Sustainment (EPIS) framework (Aarons et al., 2011), this study aimed to bridge these gaps by 1) identifying essential elements of athlete fit and to create the first Athlete-Fit Tool (AFT); and 2) exploring the usability and implementation efforts of the AFT in a sport setting.

Methods
Using a multi-phase mixed-methods design, Study one involved a two-round Delphi method with researchers and coaches (n = 19) to identify and reach consensus on essential elements of athlete-fit and inform creation of the AFT. Study two involved implementing the AFT with both coaches (n = 11) and athletes (n = 61) to explore the appropriateness and feasibility of the AFT, as well as perceptions of athlete fit.

Results & Findings
Delphi findings supported a multidimensional conceptualization of the AFT encompassing four sub-categories: Athlete-Macro (AM) Fit, Athlete-Team (AT) Fit, Athlete-Role (AR) Fit, Athlete-Coach (AC) Fit, with 19 items in total. Study two involved exploring the real-world usability of the AFT in a sport setting, with findings indicating the AFT was highly appropriate and feasible in a sport setting, while also identifying practical barriers and facilitators in its continued integration. There was congruency between athlete and head coaches on items related to AM Fit, AC Fit, AT Fit (r_s = .31 – .59) and between athlete and assistant coaches on items related to AM Fit, AT Fit, and AR Fit (r_s = .28 – .50). This work introduces the first applied sport-related measure of athlete fit and provides initial evidence for its utility in a sport context.

Conclusion

This is a starting point for further research in athlete-environment fit to build upon. Empirically, future studies should examine the psychometric properties of the AFT and experimental work could explore its relationship to key areas of group dynamics (i.e., roles, conceptual framework of sport groups). From an applied standpoint, mental performance consultants' can incorporate the AFT into their work with athletes and coaches to inform individual development programmes and potentially inform aspects of identification and selection in the future with more research.

References

Aarons, G. A., Hurlburt, M., & Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health and Mental Health Services Research, 38*(1), 4–23. https://doi.org/10.1007/s10488-010-0327-7

Abdalla, I., Al-Zufairi, A. M., Al-Homoud, M., & Muhammad, A. H. (2019). Fitting in: Different types of person-environment fit as drivers of career self-management in Kuwait. *International Business Research, 12*(9), 29. https://doi.org/10.5539/ibr.v12n9p29

Kim, J. (Sunny), & Gatling, A. (2019). Impact of employees' job, organizational and technology fit on engagement and organizational citizenship behavior. *Journal of Hospitality and Tourism Technology, 10*(3), 323-338. https://doi.org/10.1108/JHTT-04-2018-0029

Sylva, H., Mol, S. T., Den Hartog, D. N., & Dorenbosch, L. (2019). Person-job fit and proactive career behaviour: A dynamic approach. *European Journal of Work and Organizational Psychology, 28*(5), 631–645. https://doi.org/10.1080/1359432X.2019.1580309

Verquer, M. L., Beehr, T. A., & Wagner, S. H. (2003). A meta-analysis of relations between person–organization fit and work attitudes. *Journal of Vocational Behavior, 63*(3), 473–489. https://doi.org/10.1016/S0001-8791(02)00036-2



Recognition for Outstanding Work

Probabilistic Representative Learning Designs: A Data Driven Approach to Optimizing Learning Environments Using Predictive Pedagogy

Ben Csiernik and Nick Wattie

Faculty of Health Sciences, Ontario Tech University, Canada

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Keywords
representative learning design, predictive pedagogy, learning environments, athlete fit

Background
Representative Learning Design (RLD) principles emphasize the importance of creating practice environments and tasks that replicate the demands of competition (Gorman & Maloney, 2016; Pinder et al., 2011). Recent theoretical and applied advancement have sought to integrate concepts and approaches from sport analytics with those of skill acquisition. For example, the skill acquisition periodization framework (Farrow & Robertson, 2017) emphasizes the potential of using competition event data to assess and inform the specificity of practice (e.g., processing time prior to pass completion). The rule induction framework builds on this by demonstrating the importance of high frequency game events to inform RLD (Robertson et al., 2019), which can be informed by various analytic techniques (e.g., Teune et al., 2026). However, one of the challenges of utilizing frequency of competition event data to inform RLDs is that not all event data relates to successful competition outcomes (i.e., goals & winning). For example, in women's ice hockey, approximately 25% of shots come from locations that have very low probabilities of success, often less than 1% (Csiernik et al., 2025).

Aim
First, a critical review proposes a complementary methodological approach to analytics-informed RLDs guided by competition outcome models and metrics (i.e., expected goals: [xG]). Second, a team-level case study is presented to demonstrate examples of how the implementation of appropriate analytical models can measure if learning is occurring, specifically in regard to tactical decision making and execution.

Methods
A bespoke xG model (AUC = 0.815) in women's collegiate ice hockey was used to inform the representativeness of practice drills and offensive strategy for a collegiate team over the course of the 2024-2025, and 2025-2026 seasons. Examples of drill modifications to support data driven offensive approaches included marking designated shooting zones, encouraging athletes to discover tactical approaches to get into more statistically desirable shooting locations, and small-sided games constraining athletes' positioning.

Results
Improvement in team expected goals increased year over year from 1.28 xG per game in 2024, to 1.97 in 2025, and 2.20 in 2026. Between 2025 and 2026, there was a 12.3% increase in medium danger scoring chances (xG values between 0.1 and 0.2), and a 13.1% increase in high danger scoring chances (xG values greater than 0.2).

Conclusion

The use of more advanced analytics offers ways to meaningfully support drill design, performance evaluation, and to measure learning. This critical review and case study provides another lens for how to apply game event data to inform skill acquisition, which we call probabilistic RLD [P(RLD)]. Metrics like event frequency and xG, can serve multiple uses with respect to P(RLD), including drill and practice design, learning assessment (i.e., transfer tests), post hoc extrapolation of representative perceptual and motor variables, and informing the long-term development of athletes across different levels of sport.

References

Csiernik, B., Cavell, M., Nauboris, K., & Wattie, N. (2025). A comparison of shot selection and goal scoring between collegiate and professional women's and men's ice hockey. *Frontiers in Sports and Active Living*, *7*. https://doi.org/10.3389/fspor.2025.1648099

Farrow, D., & Robertson, S. (2017). Development of a skill acquisition periodisation framework for high-performance sport. *Sports Medicine*, *47*(6), 1043–1054. https://doi.org/10.1007/s40279-016-0646-2

Gorman, A. D., & Maloney, M. A. (2016). Representative design: Does the addition of a defender change the execution of a basketball shot? *Psychology of Sport and Exercise*, *27*, 112–119. https://doi.org/10.1016/j.psychsport.2016.08.003

Pinder, R. A., Davids, K., Renshaw, I., & Araújo, D. (2011). Representative learning design and functionality of research and practice in sport. *Journal of Sport and Exercise Psychology*, *33*(1), 146–155. https://doi.org/10.1123/jsep.33.1.146

Robertson, S., Spencer, B., Back, N., & Farrow, D. (2019). A rule induction framework for the determination of representative learning design in skilled performance. *Journal of Sports Sciences*. (world). https://www.tandfonline.com/doi/abs/10.1080/02640414.2018.1555905

Teune, B., Singh, H., & Robertson, S. (2026). Perspectives on sports analytics to inform constraint manipulation, representative learning and functional variability in practice design. *Human Movement Science*, *105*, 103447. https://doi.org/10.1016/j.humov.2025.103447



Recognition for Outstanding Work

The Talent Development Ecosystem in Italian Football: "Vincere non è importante ma è l'unica cosa che conta" [Winning is not important, but it's the only thing that matters]

Journal of Expertise
2026. Vol. 9(3)
© 2026. The authors license this article under the terms of the Creative Commons Attribution 3.0 License.
ISSN 2573-2773

Gabriele Morganti[1,2], Paolo R. Brustio[3], Gennaro Apollaro[4]. Francesca Strassoldo di Villanova[1], Elvira Padua[1], Bruno Ruscello[1], and Adam L. Kelly[2]

[1]Department of Human Sciences and Promotion of the Quality of Life, San Raffaele Roma Open University, Italy
[2]Research for Athlete and Youth Sport Development (RAYSD) Lab, Birmingham City University, UK
[3]Department of Clinical and Biological Sciences, University of Turin, Italy
[4]Department of Neuroscience, Rehabilitation, Ophthalmology, Genetics and Maternal Child Health, University of Genoa, Italy

Keywords
youth football, birth advantage, birthplace effects, relative age effects, developmental advantages

Background
Research in football has often framed talent identification and development (TID) processes from a microsystemic and performance-oriented perspective, including an overreliance on studying variables internal to players that can be objectively measured (Sarmento et al., 2018). However, recent evidence has criticised a cross-sectional and decontextualised approach to investigating TID models (Verbeek et al., 2023), which do not consider environmental constraints on behaviours (O'Sullivan et al., 2023) and the multidimensional nature of talent (Bailey & Collins, 2013).

Aim
This reflection presents an integrative synthesis of multiple studies conducted by our research group within the talent development ecosystem in Italian football. The aim is to provide a contextualised understanding of TID models, situated within their specific interplay of political, historical, cultural, and economic factors.

Methods
This integrative synthesis combines findings from a doctoral research programme, including quantitative analyses (i.e., relative age effects, birthplace effects, internal migration patterns, and international recruitment strategies) and qualitative investigations of media narratives in the Italian sporting press.

Results
Across studies, findings revealed dominant football talent narratives in the Italian sporting press. These narratives shape which developmental pathways, interpersonal relationships, performance standards, and attributes are perceived as salient and portrayed as routes to being recognised as talented, potentially influencing preferences, personal experiences, and skill-acquisition processes. Relatedly, several studies have also documented pitfalls and challenges across the talent development ecosystem in Italian football, highlighting inequalities in opportunities to enter and progress through the talent pathway, suggesting that the system likely prioritises current performance values and early results. For example, geospatial analyses in Italy showed higher professional player production in the historically wealthier provinces of Northern and Central Italy compared to the South. Consequently, aspiring talented youth players from Southern Italy often relocate to

Northern and Central provinces to receive greater developmental opportunities. Moreover, research has documented an increase in international youth recruitment, which may reduce playing opportunities for Italian players. Additionally, selection biases are also evident, with an overrepresentation of relatively older and left-footed players at both youth and senior levels.

Conclusion

By shifting from an individual and performance-centred dimension to the broader ecosystem, this study synthesises the knowledge produced by our research group on the Italian football ecosystem, advancing a sociocultural and contextually situated understanding of TID and demonstrating how preferences, common practices, and outcomes are associated with the broader ecosystemic influences. This perspective encourages national football governing bodies to critically reflect on the broader sociocultural context in which they operate, to investigate and refine their current practices and outcomes from an ecological viewpoint.

References

Bailey, R., & Collins, D. (2013). The standard model of talent development and its discontents. *Kinesiology Review, 2*(4), 248-259. https://doi.org/10.1123/krj.2.4.248

O'Sullivan, M., Vaughan, J., Rumbold, J. L., & Davids, K. (2023). Utilising the learning in development research framework in a professional youth football club. *Frontiers in Sports and Active Living, 5*:1169531. https://doi:10.3389/fspor.2023.1169531.

Sarmento, H., Anguera, M., Pereira, A., & Araùjo, D. (2018). Talent identification and development in male football: A systematic review. *Sports Medicine, 48*, 907–931. https://doi.org/10.1007/s40279-017-0851-7

Verbeek, J., Van Der Steen, S., Van Yperen, N. W., & den Hartigh, R. J. R. (2025). What do we currently know about the development of talent? A systematic review in the soccer context. *International Review of Sport and Exercise Psychology, 18*(2), 758–780. https://doi.org/10.1080/1750984X.2023.2283874