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PERFORMANCE INTELLIGENCE
WHITEPAPER SERIES

PAPER THREE OF SEVEN · GRASSROOTS ATHLETICS

Closing the Coaching Gap

How responsible AI can strengthen grassroots athletics without replacing the coach

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About this series

This is the third of seven papers examining how artificial intelligence can be used responsibly in performance sport. Each paper stands alone. Together they set out a single argument, which is that the durable advantage in sport comes from better decisions rather than from more data, and that better decisions require systems designed around the person who is accountable for them.

This paper differs from the others in one respect. It is written for people who are not paid to do the work they do. A community athletics coach gives an evening, a Saturday and a good deal of unrecorded time to a club, and any technology proposed to them has to earn its place against that standard rather than against a performance budget.

Editorial balance. Roughly seven parts in ten of this document is evidence and sector analysis, two parts in ten is original framework, and one part in ten concerns the Athleet.AI platform itself. Readers who want the argument without the product can stop at Chapter 14.

HOW TO READ THE EVIDENCE TAGS

Every substantive claim carries a tag stating what kind of evidence supports it. The tags are used consistently across the series.

PEER-REVIEWED A primary study in a peer-reviewed journal.

REVIEW A systematic review or meta-analysis.

CONSENSUS A consensus statement, governing-body position or regulator guidance.

SURVEY A national survey or official statistic.

PRACTICE Practitioner opinion, including the author's own.

ATHLEET.AI The author's own framework or analysis, proposed rather than proven.

Where the evidence is thin, the paper says so. Where a figure could not be verified, it has been left out rather than estimated.

Legal, regulatory and safeguarding notice. Chapters 10 and 11 describe data protection law, regulator guidance and safeguarding standards. Nothing in this document constitutes legal advice. The provision of legal advice sits outside the terms of any engagement with the author or with Athleet.AI, and the material is presented to support discussion and further review by qualified advisers.

Nothing here replaces a club's obligations under its own governing body's safeguarding policy, or the judgement of a designated welfare officer. Where this paper draws a practical implication that a source does not itself state, the text says so.

ILLUSTRATIVE MATERIAL

Every club, coach, athlete and scenario in this paper is invented. Cases are marked **illustrative scenario** wherever they appear. Published research and official statistics are cited and numbered; invented material is never presented as evidence.

CITATION

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Comments and corrections are welcome and will be acknowledged in later versions.

ALSO IN THIS SERIES

- **Paper one.** *The Responsible Performance System.* Governance and trust in sports AI.
- **Paper two.** *The Intelligent Track.* AI and event-specific expertise in elite athletics.
- **Paper four.** *Casting the Net Wider.* AI as a force multiplier in football pathways.
- **Paper five.** *The Connected Endurance Athlete.* Integrated preparation in triathlon.
- **Paper six.** *The Augmented Touchline.* Responsible AI in elite football.
- **Paper seven.** *The Augmented Golfer.* AI across technique, practice and strategy.

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A NOTE FROM THE AUTHOR

Written from the side of a wet track

I coach as a volunteer, which means I have written a great many session plans at 11 o'clock at night for a group I will see for 90 minutes the following evening. That is the vantage point from which this paper is written. It is a different vantage point from the one behind the elite paper in this series, and the differences matter more than the similarities.

Community athletics does not have a data problem. Most clubs could not fill a spreadsheet if they wanted to, and would be right not to try. What clubs have is a capacity problem, an administration problem and a knowledge-access problem, all of which land on the same small group of people who are also holding down jobs. Technology aimed at this part of the sport keeps arriving as a smaller version of something built for professionals, which is roughly as useful as a scaled-down aircraft carrier.

There is also a harder truth in here. The evidence on youth athletics is uncomfortable reading for anyone who selects on early results, and the evidence on who leaves the sport, and when, is worse. I have set both out rather than working around them, because a paper that flatters the sector would be of no use to the people running clubs.

I have been careful with numbers throughout. Where I could not verify a statistic against its original source, it is absent rather than approximated, and the method note at the back lists what I looked for and could not find. Coaches deserve that standard from anyone asking for their attention.

TWO PAGES THAT CIRCULATE ON THEIR OWN

Executive summary

Grassroots athletics is limited by coaching capacity rather than by information. A club with 120 members and eight active coaches cannot individualise, cannot review every athlete, and cannot afford the specialist support that professional sport takes for granted. The coaches carrying that load are also, in most cases, doing it for nothing, in the evenings, around work.

This paper argues that responsible artificial intelligence has a real and comparatively modest role in that setting. It can draft, differentiate, remember, communicate and prompt reflection, releasing coaching attention for the part that only a person can do. It also argues, at length, that several things technology could easily be pointed at in youth sport should be refused outright, including anything that selects, ranks, interprets pain, or communicates with a child without an adult in the loop.

1

The workforce is under strain and changing shape. Around 3.1 million people coached somewhere in the United Kingdom in the year to mid-2024, and the share coaching only as volunteers fell to 33 per cent, from 40 per cent in 2022 and 46 per cent in 2019. Sport volunteering in England remains 1.7 million people below its 2016 level.

2

Cost and time are the barriers, and both are addressable. A third of coaches cite the cost of qualifications and a third cite balancing work and home life. Administration is the part of the load most amenable to help, and it is the part nobody entered coaching to do.

3

Early selection is close to worthless, and expensive. Junior performance explains around two per cent of the reliable variance in senior performance. In French athletics data, being a year older within the selection year was worth 6.5 per cent in under-13 boys' 100m times, falling to 1.9 per cent by under-17.

4

Maturity estimates carry more error than clubs realise. The most widely used non-invasive equation showed longitudinal stability in fewer than 45 per cent of players and overestimated age at peak height velocity by up to 0.9 years, with the error running in opposite directions for earlier and later maturers.

5

The sport loses teenage girls in large numbers, for reasons it can name. Some 43 per cent of girls who saw themselves as sporty at primary school disengage as teenagers, against 24 per cent of boys, and enjoyment of physical education falls from 86 to 56 per cent across the same age range.

6

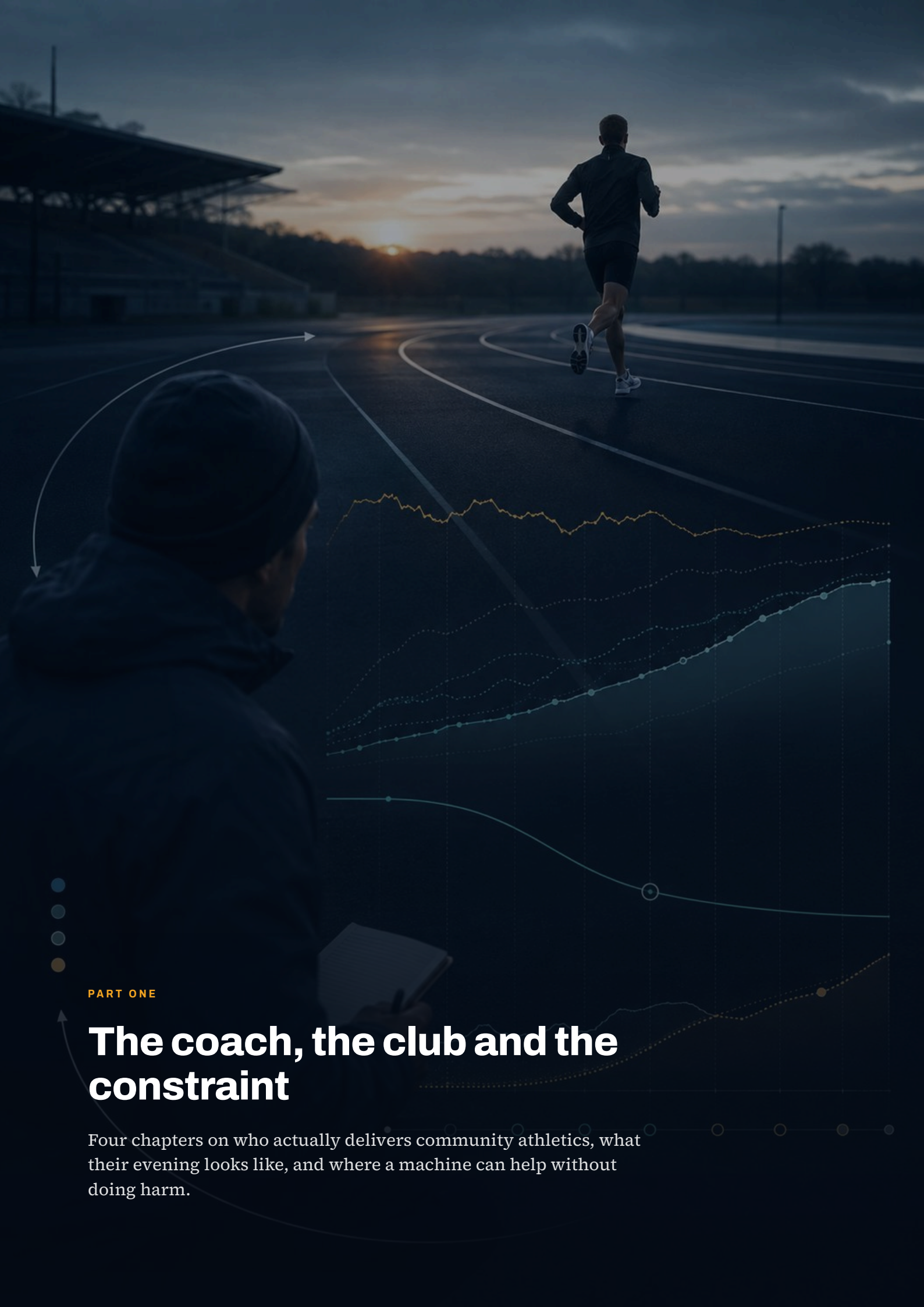
Children's data raises the bar, and the bar is public. The Children's Code sets 15 standards for services likely to be accessed by under-18s, and Article 35 of the UK GDPR requires a data protection impact assessment before, not after, any high-risk processing begins.

What follows for a club or an association

The recommendation is cheaper and slower than most technology proposals. Clubs should begin by writing down what they already do, since a club whose session plans, consent records and membership list live in one place has taken the largest single step available to it and has spent nothing. Assistance should then be introduced where the consequence of an error is low and the time saved is real, meaning session drafting, differentiation, communication and record-keeping.

Anything touching selection, health, body composition or a child's direct contact with a system should be refused. That boundary is drawn in Chapter 4 and repeated in Chapter 10, and it is drawn deliberately tighter than the law requires, because a volunteer welfare officer should not have to adjudicate a borderline case at nine o'clock on a Thursday.

Chapter 14 proposes a regional cohort pilot rather than a product rollout, with coach time, retention and coach confidence as the measures, and with an honest count of the prompts coaches found useless. The evidence base for AI in community coaching is currently thin, and one published evaluation in an adjacent sport found large time savings alongside poor accuracy. Anyone claiming more than that is ahead of the evidence.



PART ONE

The coach, the club and the constraint

Four chapters on who actually delivers community athletics, what their evening looks like, and where a machine can help without doing harm.

CHAPTER ONE

Why coaching capacity is a participation problem

Every participation strategy eventually runs into the same constraint, which is the number of people willing to stand on a track on a Tuesday and the amount they can each carry.

Policy conversations about participation tend to concern facilities, funding and campaigns. Clubs experience the problem differently. A club can be given a refurbished track, a marketing grant and a waiting list of interested children, and it will still turn people away if it does not have the coaches to take them. Coaching capacity is the binding constraint, and it is treated as an afterthought with remarkable consistency.

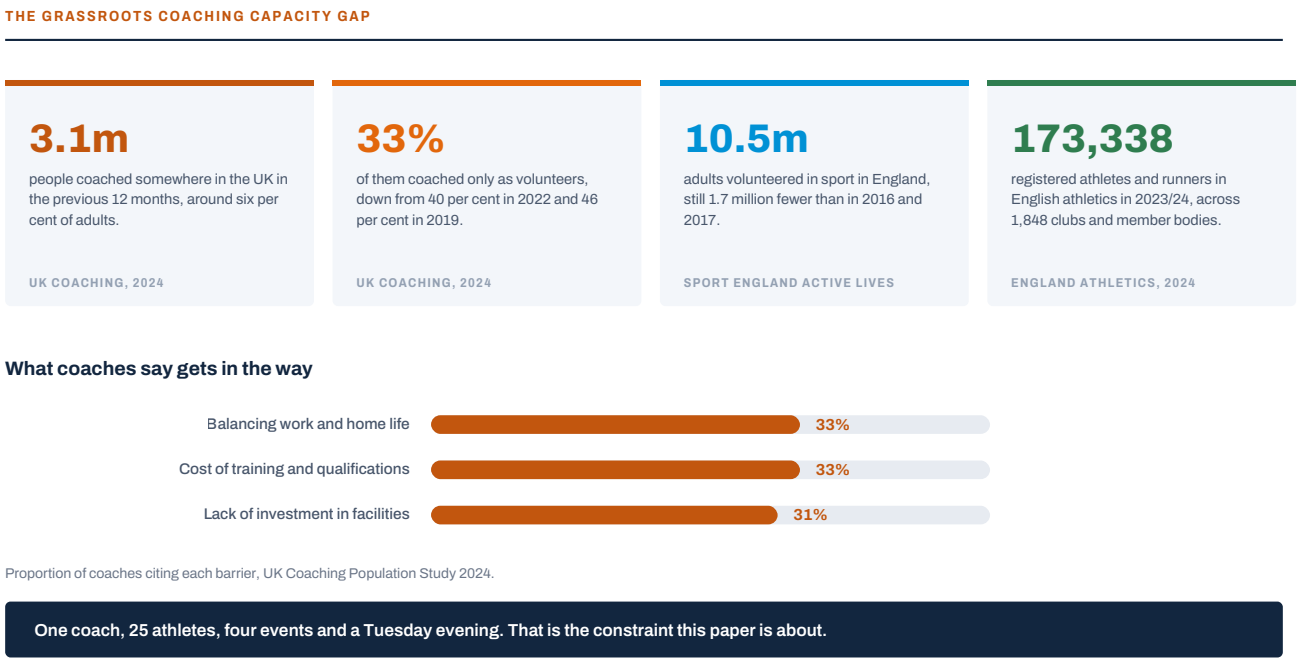


FIGURE 1 The scale of the workforce and the barriers it reports.

UK Coaching Population Study 2024 (references 1 and 2); Sport England Active Lives (reference 4); England Athletics Annual Report and Financial Statements 2023/24 (reference 6). SURVEY

The numbers describe a workforce under pressure. Around 3.1 million people coached somewhere in the United Kingdom in the 12 months to mid-2024, roughly six per cent of adults, and 33 per cent of them coached only as volunteers, down from 40 per cent in 2022 and 46 per cent in 2019.[1] SURVEY Sport volunteering in England recovered by 488,000 people in the year to November 2024 and remained 1.7 million below its 2016 and 2017 level.[4] SURVEY

English athletics itself reports a healthier picture than the cross-sport trend. Membership grew from about 168,000 in 2022/23 to 173,338 registered athletes and runners in 2023/24, across 1,848 clubs and member bodies, with more than 5,000 volunteers trained that year across coaching, leadership and officials' courses.[6] SURVEY Those are governing-body figures rather than independently audited ones, and the governing body does not publish a total for licensed coaches, nor separate paid from voluntary coaching. Read together with the cross-sport

A CAUTION ON THE DATA

These are self-reported survey figures across all sports. No published source gives the volunteer share of athletics coaches specifically, and this paper does not estimate one.

survey, they suggest a workforce that is growing in number while the proportion giving time freely declines, which is a different problem from the one most participation strategies are designed to solve.

1.1 What the constraint actually looks like

Consider the arithmetic of a mid-sized club. Say 120 members across four age groups, eight coaches who attend regularly, two training nights and one competition most weekends. Every coach is responsible for between 12 and 25 athletes, and the time available to think about any individual one of them is measured in minutes per month. Under that constraint the session becomes the unit of coaching, and the athlete becomes a member of a group.

That is a rational response to the constraint rather than a failure of care. It also means that the athlete who needs a different progression, the athlete who has quietly stopped enjoying it and the athlete who is about to grow four inches all receive the same session, because nobody has the attention to notice.

THE ARGUMENT IN ONE PARAGRAPH

Grassroots athletics needs affordable access to trusted knowledge, relief from administration and practical help managing mixed groups. It does not need more measurement, and it should refuse anything that selects, ranks or interprets a child's health. Everything in this paper follows from those two sentences.

CHAPTER TWO

The reality of the volunteer coach

The person this paper is about has a job, a family and a coaching qualification they paid for themselves, and they are the most under-supported skilled worker in British sport.

Ask a volunteer athletics coach where their coaching time goes and the answer rarely begins with coaching. It begins with the register, the entries, the parent messages, the risk assessment, the equipment that has gone missing again and the session written on Sunday evening for a group whose attendance will not be known until Tuesday at seven.

The survey evidence supports what clubs describe. In the 2024 population study, 33 per cent of coaches cited balancing work and home life as a barrier, 33 per cent cited the cost of training and qualifications, and 31 per cent cited a lack of investment in facilities.[1] SURVEY An earlier edition of the same research found cost of qualifications cited by 41 per cent of volunteer coaches.[2] SURVEY Qualitative work comparing volunteer, part-time and full-time coaches found that volunteers reported organisational stressors at levels comparable to full-time staff while drawing on markedly fewer sources of support.[8] PEER-REVIEWED

A survey of 202 UK coaches across settings reported that around four in five were unaware of any mental health support offered by the organisation they coached for, with grassroots and community coaches reporting the highest rates of difficulty.[7] PEER-REVIEWED The sample was small and self-selecting, so the prevalence figures should be read cautiously. The finding about awareness of support is

SUPPORT, NOT JUST TOOLS

Volunteer coaches carry a comparable administrative burden to paid staff with far less support around them. That gap is the one worth closing first.

harder to explain away, and it describes an organisational failure rather than an individual one.

2.1 Where the evening actually goes

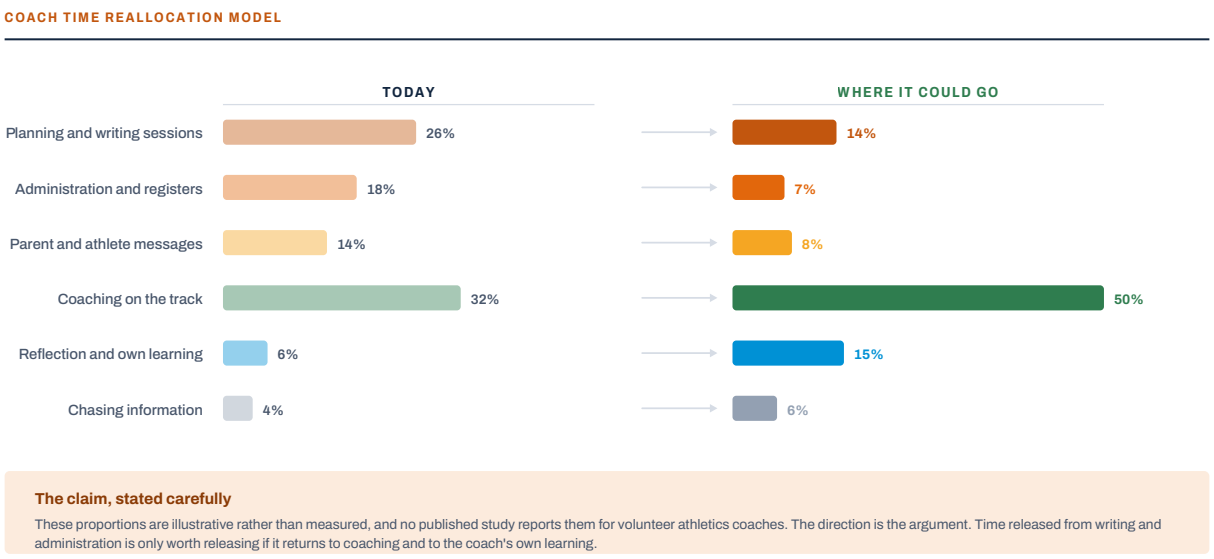


FIGURE 2 The coach time reallocation model. The proportions are illustrative and the direction is the argument.

Athleet.AI framework, informed by references 1, 2 and 8. ATHLEET.AI

I have set out that model with the proportions marked as illustrative, because no published study reports a time breakdown for volunteer athletics coaches and I decline to invent one. What the model asserts is a direction, which is that the work most amenable to automation is also the work coaches least want to do, and that the value of releasing it depends entirely on where the released time goes.

That last point is the one clubs should hold on to. Time saved on administration that returns to administration has achieved nothing. The measure of success for any tool in this setting is whether coaches spend more of the evening watching athletes and more of the week learning, which is a question about club culture as much as about software.

CHAPTER THREE

Where AI can genuinely help

Five useful jobs, all of them unglamorous, and all of them things a coach currently does at eleven o'clock at night.

The honest list of what artificial intelligence can do well for a community club is shorter than the marketing suggests and longer than the sceptics assume. It writes competently from a well-specified brief. It remembers precisely. It applies a rule consistently across 25 athletes. It retrieves. And it drafts the message a tired coach has been putting off since Sunday.

None of that is coaching. All of it is work that currently consumes coaching time.

3.1 Drafting, differentiating and remembering

Session drafting is the clearest case. A coach who has told a system the club's method, the aim of the block and tonight's group can receive a draft in seconds and spend their time correcting it, which is a better use of an evening than starting from a blank page. Differentiation follows directly, since the same draft can be expressed as a progression and a regression without further effort.

Remembering is the least discussed and probably the most valuable. Community clubs lose an extraordinary amount of knowledge every time a coach moves away, and they lose the record of individual athletes almost as fast. A club that can say what an athlete did two winters ago, and what the coach observed at the time, has an asset that no amount of measurement equipment would give it.

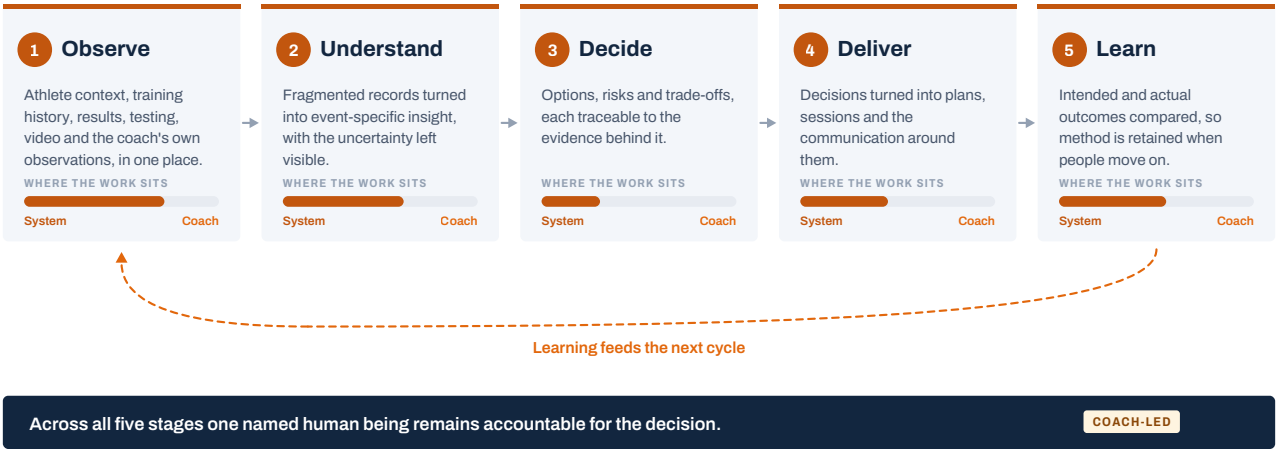


FIGURE 3 The performance intelligence cycle used across this series, read at club scale. The balance shifts towards the coach at the point of decision, and in a youth setting it shifts further than in the elite paper.

Athleet.AI framework. ATHLEET.AI

3.2 The evidence for this is thin, and saying so matters

A critical evaluation of a general-purpose language model used to write exercise prescriptions found that AI-based fitness applications are becoming common while their efficacy and validity have not been thoroughly investigated, particularly across differing health conditions.[38] COMMENTARY A small evaluation in an adjacent sport is more instructive still. Researchers compared two widely available language models against manual analysis of a referee's game dialogue and found the tools completed in around two minutes what had taken seven hours and 20 minutes manually, while identifying 18 instances of a coded behaviour where manual analysis found 116.[37] PEER-REVIEWED

That is a single small study in a different sport, and it should not be generalised far. It does illustrate the shape of the current technology with unusual clarity. Where the task is drafting something a coach will read and correct, the time saving is real and the accuracy failure is caught. Where the task is analysis that nobody checks, the same tool produces a confident and substantially incomplete answer.

No evaluated example of an AI tool deployed in a United Kingdom grassroots athletics club appears in the published literature. That absence is stated here as a fact about the field rather than as a gap in the search, and it is the reason Chapter 14 proposes an evaluated cohort pilot rather than a rollout.

READ THAT FINDING CAREFULLY

Enormous time saving, poor accuracy. That combination is exactly what a club should expect today, and it determines which jobs are safe to hand over.

CHAPTER FOUR

Where AI must not decide

A short chapter, and the one that should survive if a club reads nothing else.

Some decisions in youth sport carry consequences that no efficiency gain can justify risking. They are easy to list and they should be written into any club's own policy before any tool is adopted, because a boundary agreed in advance is worth a great deal more than a judgement made under pressure.

FIGURE 4 The safe assistance boundary. The right-hand column is drawn deliberately tighter than the law requires.

Athleet.AI framework, informed by references 29, 30 and 32. ATHLEET.AI

Four of those refusals deserve a sentence of explanation each. Selection must stay with people because the evidence in Chapter 5 shows that current performance in a young athlete is a poor guide to anything, and because a child told by a system that they were not chosen has been failed in a way that is hard to repair. Pain and injury must stay with qualified people because interpretation of symptoms is clinical work and a plausible-sounding answer is worse than none.

Advice on diet, weight or body composition for a young person should be refused entirely, whatever the framing and whoever asks. A general-purpose model will answer such a question fluently and a young athlete may act on it, and no club has any business exposing a child to that. And direct contact between a system and a child without an adult in the loop removes exactly the oversight that safeguarding practice exists to preserve.

A TEST FOR ANY PROPOSED FEATURE

Ask what happens when the system is confidently wrong, and who finds out. If the answer is that a coach spots it and corrects a draft, the feature is probably fine. If the answer is that a 14-year-old acts on it before anybody notices, the feature should not exist.

My own position, which goes beyond what any published guidance requires, is that the safest design in youth sport keeps every output flowing through a coach. That costs some convenience. It is the price of a system that a welfare officer can defend without hesitation, and clubs should treat it as non-negotiable rather than as a setting.

CHAPTER FIVE

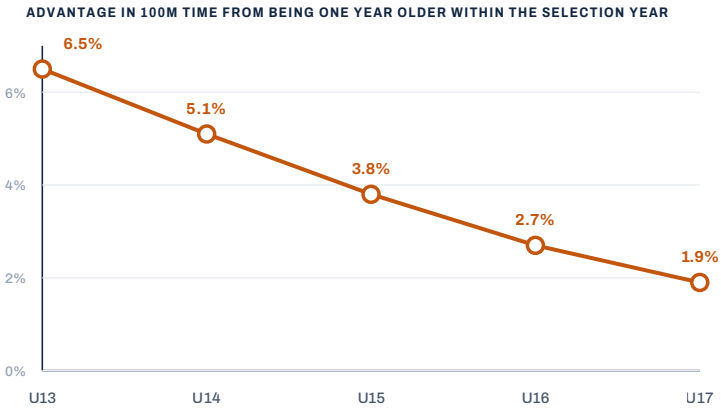
Development, maturation and the myth of the early winner

The child winning the under-13 100m is, on the balance of the evidence, mostly demonstrating a birthday.

Youth athletics selects, informally and constantly. Squads form, groups are streamed, county trials happen, and a great deal of that sorting rests on how fast somebody ran last Saturday. The published evidence on what that tells you is unusually clear and unusually ignored.

5.1 The relative age effect

THE RELATIVE AGE EFFECT FADES, BUT NOT BEFORE THE SELECTING IS DONE



2.2%

of the reliable variance in senior performance is explained by junior performance, pooled across 129 effect sizes and 13,392 athletes in Olympic sports.

Selecting on today's result is therefore selecting mostly on birth month, growth and access, which is a poor use of a club's attention and a good way to lose people.

French athletics, 358,610 performances by athletes aged 12 to 21, boys' 100m. The advantage is largest exactly where clubs and squads make their first selections.

Difernand and colleagues, 2023; variance figure from Barth and colleagues, 2024.

FIGURE 5 The advantage conferred by birth month within a selection year, and how little junior ranking predicts.

Difernand and colleagues, 2023 (reference 23); Barth and colleagues, 2024 (reference 24). **PEER-REVIEWED**

An analysis of 358,610 performances by French athletes aged 12 to 21 found that in boys' 100m sprinting, one year's advantage in birth date within the selection year was worth an average 6.5 per cent in time at under-13, falling to 1.9 per cent by under-17.[23] PEER-REVIEWED The effect was larger at higher competitive levels and among younger age groups, which is to say it is largest exactly where selection first happens. A meta-analysis of 38 studies across 14 sports and 16 countries had already established the effect as consistent, if generally small, with the largest effects among adolescent males at representative level.[22] REVIEW

The consequence for a club is direct. A group streamed on early results is streamed substantially on birth month, growth and access, and the athletes filtered out are disproportionately the ones who were younger, later maturing or newer to the sport. Some of them do not come back.

6.5%

UNDER-13 BOYS' 100M

The average time advantage from being a year older within the selection year. By under-17 it has fallen to 1.9 per cent.

5.2 Junior results and senior outcomes

A meta-analysis of 129 effect sizes across 13,392 athletes in Olympic sports found a pooled junior-to-senior performance correlation of 0.148, meaning junior performance explained around 2.2 per cent of the reliable variance in senior performance, robustly across sport type, sex and competitive level.[24] REVIEW Athletics-specific work agrees. Among world-ranked jumpers, eight per cent of men and 16 per cent of women in the top 50 at 16 reached the senior top 50.[25] PEER-REVIEWED

The theoretical critique arrived earlier. The standard pyramid model of talent development has been described as unsubstantiated from both a process and an outcome perspective, on the grounds that it assumes development is linear, that current performance indicates future potential, and that early de-selection is permanent.[16] PRACTICE Analysis of the physiological basis of the long-term athlete development model reached a compatible conclusion, finding the evidence for windows of trainability weak and the model generic rather than individualised.[15] PEER-REVIEWED

5.3 Maturity, and how little we can estimate it

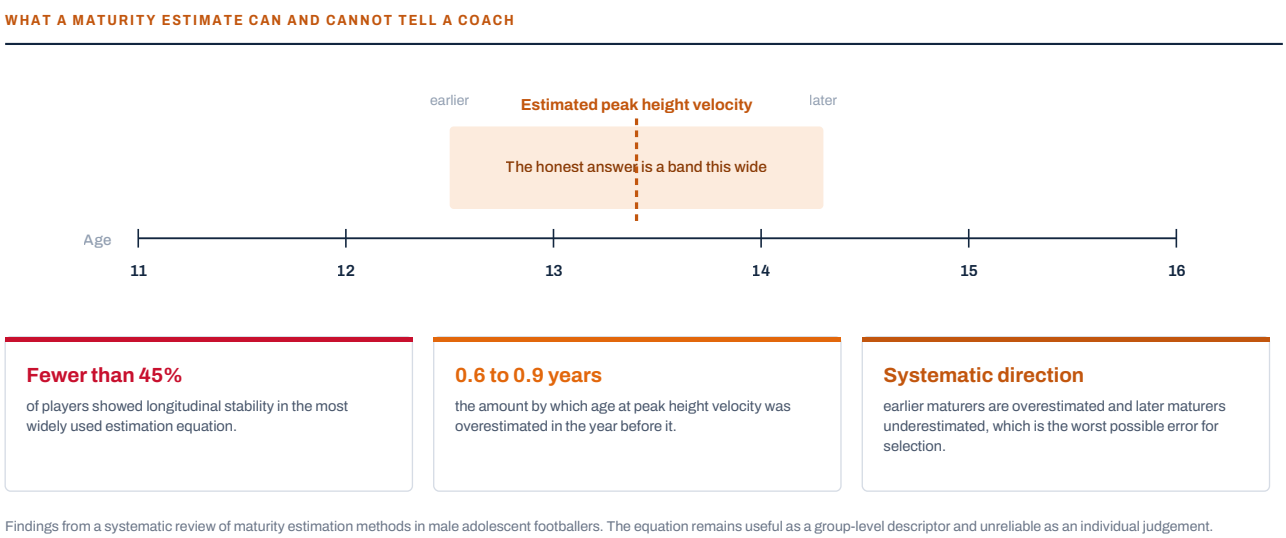


FIGURE 6 The uncertainty attached to a non-invasive maturity estimate, and why the direction of the error matters more than its size.

Sullivan and colleagues, 2023 (reference 20), reviewing the equation published by Mirwald and colleagues, 2002 (reference 19). REVIEW

Clubs are increasingly encouraged to consider biological maturity rather than chronological age, which is sound advice resting on a shaky instrument. A narrat-

ive systematic review found that the most widely used non-invasive equation showed longitudinal stability in fewer than 45 per cent of players, overestimated age at peak height velocity by 0.6 to 0.9 years in the year before it occurred, and did so systematically, overestimating for earlier maturers and underestimating for later ones.[20] REVIEW

That population was male academy footballers, and generalising to mixed-sex community athletics is an inference the review does not support. What survives the caveat is a warning about precision. A maturity offset presented to a volunteer coach as a number invites decisions the number cannot carry, and my own view is that any system displaying one should display the band alongside it or not display it at all.

What the youth training literature does support is more reassuring than clubs often assume. An international consensus concluded that resistance training can be safe and effective for children and adolescents when it is age-appropriate and properly supervised, reporting meaningful strength gains in untrained young people over a training block of several months, and rejecting historical fears about damage to growth plates as unsupported by the evidence.[18] CONSENSUS The condition attached to that finding, meaning qualified supervision, is exactly the resource in shortest supply, which is an argument for coach education rather than against the training.

ILLUSTRATIVE SCENARIO

The invented under-15 group

A coach at an invented club has 18 athletes in an under-15 group. Four are September-born, physically mature and winning; three are August-born, a year behind in growth, and quietly discouraged. The club's usual practice would move the first four into the performance group in April.

What a well-designed system contributes here is a prompt rather than a decision. It can show the coach the birth-month distribution of the group, note that three athletes have attended consistently for two years without progressing on the ranking the club uses, and ask whether the April review should look at development rate as well as current mark. The coach still decides. The difference is that they decide having seen something the register would never have shown them.

CHAPTER SIX

One session, many athletes

Differentiation is the daily craft of community coaching, and it is the single job where a machine can help most without touching anything dangerous.

A Tuesday group in a community club might hold a 12-year-old in her second week, a 16-year-old county finalist, an athlete returning after six months away and a wheelchair racer, all working from one session written for a group whose composition was unknown when it was written. Holding that in mind while also running the session is genuinely difficult, and it is where inexperienced coaches struggle most.

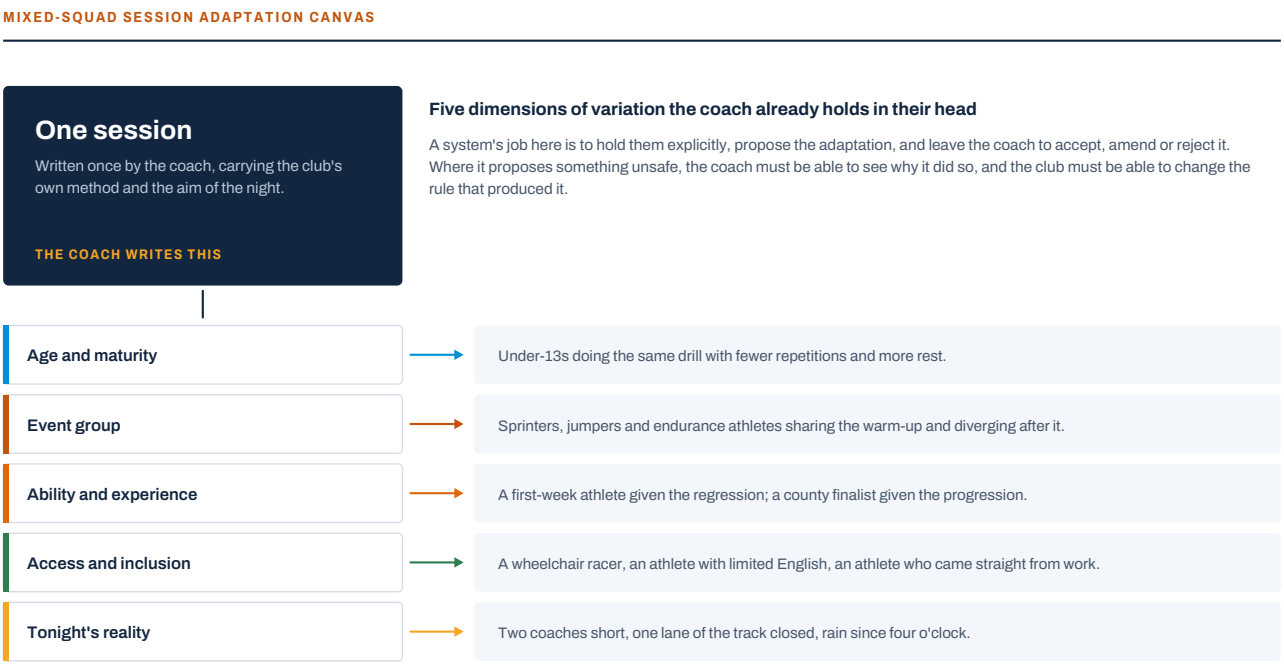


FIGURE 7 The mixed-squad session adaptation canvas. Five dimensions of variation an experienced coach holds in their head, made explicit so that a system can propose against them.

Athleet.AI framework. ATHLEET.AI

The design principle is that the coach writes the session and the system proposes the variations. That order matters. A system that generates the session from scratch imposes a method the club may not hold, while a system that adapts the coach's own session amplifies the club's method instead of diluting it.

6.1 Safe adaptation and unsafe prescription

The difference between helpful and dangerous here is narrower than it looks. An adaptation that reduces repetitions for a younger athlete is helpful. An adaptation that increases them for an athlete described as looking strong is a prescription made without knowledge of that athlete's week, growth, sleep or history, and no system has that knowledge.

The practical rule I would write into any club policy is that a system may reduce demand freely and may propose an increase only as a question addressed to the coach. That asymmetry is deliberate. The cost of an unnecessary regression is a slightly easy session, and the cost of an unwarranted progression is an injured 14-year-old.

6.2 The volume question

An expert consensus on early sport specialisation endorsed the guideline that young athletes should not train more hours per week than their age in years, flagged particular concern above 16 hours a week, and reported an injury rate more than twice as high when organised sport hours exceed free play.[21] CONSENSUS The evidence base is largely North American and much of it comes from paediatric sports medicine cohorts in other sports, so the specific thresholds should be treated as orientation rather than as rules.

Those numbers matter to a club chiefly because no single club can see the total. A 15-year-old may train with the club twice, with a school team twice, and play another sport at the weekend, and each organisation sees a reasonable load.

THE MULTI-CLUB PROBLEM

Most clubs see one part of a young athlete's week. The athlete who

trains with a club, a school and a private coach is carrying a total nobody is counting.

Asking the question, and recording the answer, costs nothing and is probably the most useful single piece of load management available at this level.

CHAPTER SEVEN

Smarter training with very little data

A club with an attendance register and a coach's notebook has more usable information than a professional squad with four dashboards nobody reads.

The management problem examined across this series is the same at every level, and the grassroots version of it is genuinely simpler. What does this young athlete's stage of development require, what did the coach plan, how did the athlete respond, what should now change, and is any of it building something durable.

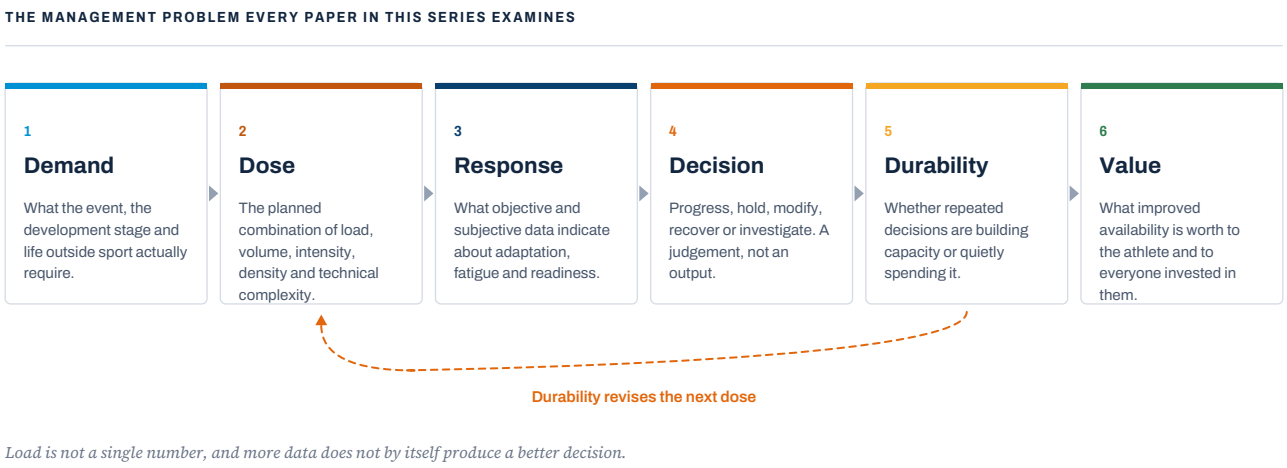


FIGURE 8 Demand, dose, response, decision, durability and value, read at club level. At this level the response is what the athlete said and how they looked, which is a legitimate measurement.

Athleet.AI framework, used across the whole series. ATHLEET.AI

Elite programmes answer the response question with force plates and wellness platforms, while a community club answers it by watching and by asking. Both are measurements. The second is considerably cheaper, and on the evidence set out in the elite paper of this series it is not obviously the worse of the two. What a club typically lacks is a way of keeping the answer, so that a pattern visible across six weeks is not lost because it was noticed on six separate Tuesdays by three different people.

7.1 Four quantities worth recording

Attendance comes first, and it is the most under-used piece of information in community sport. A young athlete whose attendance drops from weekly to fortnightly is telling the club something, and the something is more often about enjoyment, transport or a falling out than about training. Completed against planned work comes second, recorded roughly rather than precisely. How hard it felt comes third, which for a young group can be a hand signal at the end of the

session. And what the coach observed comes fourth, written in a sentence rather than a form.

Those four quantities cost a coach perhaps two minutes an evening and give a club the ability to answer questions it currently cannot. They are also, deliberately, not physiological measurements. A club that begins collecting resting heart rates from 13-year-olds has acquired special category data, a data protection obligation and a set of numbers it cannot interpret, which is a poor trade.

WORTH HIGHLIGHTING

Attendance is the closest thing community athletics has to an early-warning signal, and almost no club analyses it.

7.2 What the elite evidence says about the grassroots case

The elite paper in this series sets out at length why single ratios and readiness scores do not support individual injury prediction, drawing on a substantial methodological literature. That argument applies with more force here, since the data are sparser and the population is growing. A club should therefore treat any product offering injury risk scores for young athletes as failing on the evidence, and should say so in those terms rather than declining politely.

What remains is a modest and defensible practice. Record what happened, notice when it changes, ask the athlete, and write down what was decided. My own view is that a club doing those four things consistently is managing training load better than most professional environments were a decade ago, and it has spent nothing on equipment to do it.

CHAPTER EIGHT

Supporting coaches rather than deskilling them

A tool that answers every question produces a coach who has stopped asking them, and that is a slower and more serious failure than any single wrong recommendation.

The risk this chapter addresses is not that a system gives bad advice. It is that a system gives adequate advice for three years to a coach who would otherwise have become good, and that the club ends the period with the same number of coaches and less expertise than it started with. Nobody notices that happening, which is what makes it dangerous.

Research on how coaches acquire knowledge is relevant. Work on knowledge translation in sport reports that coaches learn mainly through personal interaction rather than through journals or formal courses.[39] COMMENTARY A study of technology adoption among coaches in a general coaching context found that platform choice was usually driven by the employer or client rather than the coach, and that coaches reported anxiety about their own digital competence.[36] PEER-REVIEWED That second study concerned executive rather than sports coaching, so applying it here is an inference rather than a finding.

8.1 Design choices that teach

A few design decisions separate a tool that develops coaches from one that quietly replaces their thinking. Explanation should come before the answer, so that a coach reads the reasoning on the way to the recommendation rather than after it.

DESIGN RULE

Show the reasoning first and the answer second. A coach who reads why will remember; a coach given only the answer will return for another one.

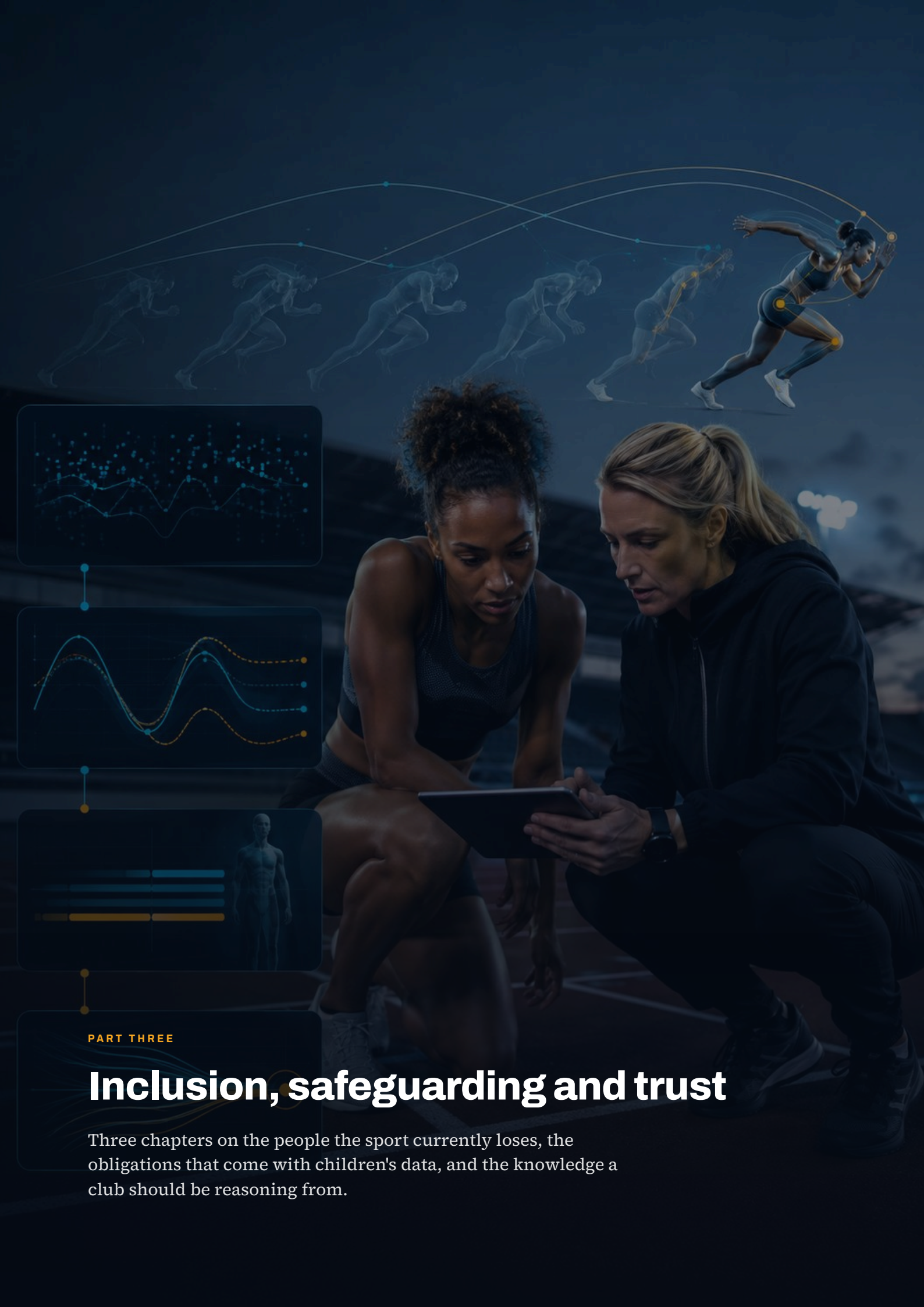
Alternatives should always be offered, since one option invites acceptance and two invite a judgement. And the coach's own corrections should be captured and reused, which improves the system while signalling where the authority in the relationship sits.

Reflection prompts belong in the same category. A short question at the end of a session, asking what the coach noticed and what they would change, is the practice that coach education has always recommended and almost nobody sustains. A system that asks it, keeps the answers and shows them back after a block is doing something genuinely developmental at essentially no cost.

8.2 The qualification barrier

Cost of qualification is among the most cited barriers in the workforce surveys, and it is a barrier a technology product cannot remove.[1,2] SURVEY What technology can do is reduce the distance between a qualification and its application, by putting the relevant part of a coach's own course material in front of them at the moment they need it, rather than in a folder they last opened on the assessment day.

That is a modest claim and it points at a specific design requirement, which is that the knowledge a system draws on should be the governing body's own approved material rather than whatever the wider internet contains. Chapter 11 takes that requirement further.



PART THREE

Inclusion, safeguarding and trust

Three chapters on the people the sport currently loses, the obligations that come with children's data, and the knowledge a club should be reasoning from.

CHAPTER NINE

The inclusive club

The sport loses people in patterns it can describe precisely, which makes the losses a design problem rather than an accident.

Inclusion in community athletics is often discussed as a value and rarely as an operational question. The operational question is narrower and more answerable, which is whether the club's ordinary practice happens to work for the people it keeps losing.

9.1 Teenage girls

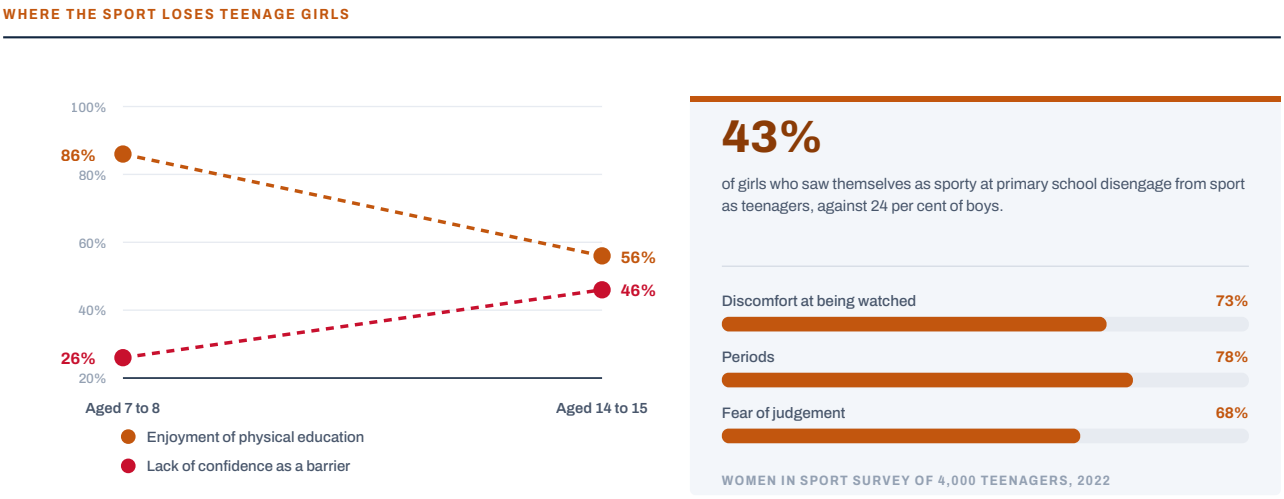


FIGURE 9 Disengagement among teenage girls, and the reasons they give.

Youth Sport Trust Girls Active national report, 2024 (reference 14); Women in Sport survey of 4,000 teenagers, 2022 (reference 13). SURVEY

A survey of 4,000 teenagers found that 43 per cent of girls who had seen themselves as sporty at primary school disengaged from sport as teenagers, against 24 per cent of boys, with discomfort at being watched cited by 73 per cent, periods by 78 per cent and fear of judgement by 68 per cent.[13] SURVEY A survey of more than 15,000 young people found enjoyment of physical education falling from 86 per cent among girls aged seven to eight to 56 per cent among those aged 14 to 15, with lack of confidence as a reported barrier rising from 26 to 46 per cent over the same range.[14] SURVEY

Those are not questions of talent identification. They concern kit, changing facilities, who else is watching a session, whether a coach has ever mentioned periods without embarrassment, and whether the club's culture rewards effort or only results. Almost all of it is within a club's control and almost none of it requires funding.

Where a system helps is in noticing. Attendance falling away across a cohort in a particular age group is visible in a register and invisible to a coach standing on a track, and a prompt that says the under-15 girls' attendance has halved since February is worth more to a club than any performance analytic.

CHARITY-COMMISSIONED SURVEYS

Both sources are commissioned research rather than peer-reviewed studies, and self-report on sensitive topics carries known bias. The size and consistency of the pattern still deserve a club's attention.

9.2 Para athletes

The evidence base here is thin enough to be worth stating plainly. Interview work with coaches, performance directors and pathway specialists across six Paralympic sports opens by recording that, despite the rapid growth of talent research in non-disabled sport, there remains limited knowledge of how talent is identified and developed in Paralympic contexts, and it finds that impairment type and classification, rather than any general athletic profile, drive both identification and expected success.[26] PEER-REVIEWED A companion review sets out why. Impairments may be congenital or acquired at any point in a life, so athletes enter pathways at unpredictable ages, and the classification system interacts with development in ways no general model anticipates.[27] REVIEW My own search found no systematic or scoping review confined to para athletics specifically, and readers should treat that absence as the state of the field.

The design consequence follows directly from the evidence gap. Any system trained predominantly on non-disabled athletes will produce confident advice about para athletes on almost no basis, and it should be built to say so rather than to interpolate. My own view is that a system's honest answer in a para context should more often be a question to the coach than a recommendation, and that clubs should test any product on exactly this case before buying it.

9.3 Cost, place and language

National activity data show a persistent socioeconomic gradient. In the most recent Active Lives reporting, 72.7 per cent of adults in the most affluent group were active against 52.4 per cent in the least affluent, 68.9 per cent in the least deprived places against 55.5 per cent in the most deprived, and 68.9 per cent of adults without a disability or long-term health condition against 48.5 per cent of those with one.[28] SURVEY Those are adult figures across all activity, and they describe the environment a club recruits into rather than the club itself.

What a club can act on is narrower. Kit costs, competition entry fees, transport to fixtures and the assumption that a parent can attend are all filters, and each is visible in a membership list if anybody looks. Language is another. A club whose written communication assumes fluent English excludes families who would otherwise join, and translation is one of the few things this technology does reliably well and cheaply.

ILLUSTRATIVE SCENARIO

The invented Saturday message

An invented club sends a fixture message on Thursday evening. It assumes the reader knows what spikes are, what a seeded heat means, that a parent can drive 40 minutes on a Saturday morning and that entry has already been paid.

Rewriting that message so it explains itself, offers a lift-share, states the cost plainly and exists in the three languages the club's families actually speak takes a coach 40 minutes they do not have. It takes a drafting tool about a minute, and the coach then checks it. This is a small example and it is close to the whole realistic case for the technology in community sport.

CHAPTER TEN

Safeguarding and children's data

A club processing children's data has obligations it mostly already has, and a club deploying artificial intelligence over that data has several more.

This chapter concerns law, regulator guidance and safeguarding standards, and the notice at the front of this paper applies to all of it. Nothing here is legal advice, and a club should take its own.

YOUTH DATA AND SAFEGUARDING MAP

What is collected	Why it is collected	Who may see it	How long it is kept	What must never happen
Attendance	Coaching the athlete	The coach	Session data for the season	Automated selection
Session completion	Club administration	The athlete	Development record while a member	Health inference
Performance marks	Progression review	A parent or carer	Images by written consent only	Third-party model training
Coach observations	Competition entry	The club welfare officer		Direct messaging without an adult
Photographs and video				

The four questions a club must be able to answer about any system it adopts

- Where is our children's data stored, and who else can reach it?
- Has a data protection impact assessment been done before deployment?
- Does our data train the supplier's models, and is that answer in the contract?
- Can a parent see, correct and remove what is held about their child?

FIGURE 10 The youth data and safeguarding map. The four questions at the foot are the ones a club committee should be able to answer before adopting anything.

Athleet.AI framework, informed by references 29 to 35. ATHLEET.AI

10.1 What the framework requires

The Child Protection in Sport Unit publishes ten standards for safeguarding and protecting children in sport, covering policy, procedures, prevention, codes of conduct, equity, communication, education, access to advice, monitoring and the use of influence.[29] CONSENSUS Those standards are the framework most governing bodies build their own requirements on, and they predate any question about artificial intelligence.

No sport-specific guidance on artificial intelligence and children's data existed when this paper was written, which is itself worth saying. What does exist is general and it is enough to work from. Article 35 of the UK GDPR requires a data protection impact assessment before high-risk processing begins, and it names systematic and extensive automated evaluation of personal aspects on which significant decisions rest as exactly such a case.[30] CONSENSUS The Children's Code adds that the assessment must focus on the specific risks to children, that profiling options should be off by default unless a compelling reason exists, and that data collection be held to the minimum the child is knowingly engaged with. Two

further requirements follow from the regulator's wider guidance rather than from any single instrument. Human involvement in a decision about a young person has to be meaningful rather than a rubber stamp, with a reviewer who is engaged, critical and able to override the system. And a club should establish in the contract whether a supplier uses club or player data to train its own models, since a processor may act only on the controller's documented instructions.

On data protection, the Age Appropriate Design Code applies to services likely to be accessed by children in the United Kingdom and sets 15 standards, among them the best interests of the child, data protection impact assessments, transparency, default settings, data minimisation, restrictions on profiling and restrictions on nudge techniques.[32] CONSENSUS It came into force in September 2020 following a transition period, and it is a statutory code rather than optional guidance.

Article 9 of the UK General Data Protection Regulation treats data concerning health, and biometric data used to identify a person, as special category data requiring a further condition beyond a lawful basis.[34] CONSENSUS On my own reading, which a club should verify with its own adviser, a good deal of what a well-intentioned club might start collecting about young athletes falls within that definition, which is a practical argument for collecting less. Article 22 of the UK GDPR gives a young person, or a parent acting for them, the right not to be subject to a decision based solely on automated processing where it produces a legal effect or affects them similarly significantly, together with a right to human intervention, to make representations and to contest the outcome.[35] CONSENSUS The Data (Use and Access) Act 2025 will replace that Article, but its section 80 had not been commenced when this paper was written.

BEFORE, NOT AFTER

The impact assessment is described as something to complete before deployment. A club that runs one after a pilot has already answered the question it was supposed to ask.

10.2 Images, which clubs get wrong most often

Safeguarding guidance advises obtaining consent from a parent or carer before photographing or filming a child under 16, with young people aged 16 and over able to consent themselves, and recommends against identifying children by name alongside images unless necessary.[31] CONSENSUS Video analysis makes this immediately relevant, since a coach filming a group of under-15s for technical feedback has created a record of identifiable children that now needs storing, controlling and eventually deleting.

The practical position I would take, going beyond what the guidance requires, is that video of young athletes should stay on club-controlled storage, should never be uploaded to a general consumer service, and should have a deletion date agreed when it is recorded. That is more restrictive than the rules. It is also the position a welfare officer can explain to a parent in one sentence, which has value of its own.

10.3 Bias, which arrives quietly

Systems trained on historical data reproduce historical decisions. A well-documented case in healthcare found an algorithm using cost as a proxy for need, systematically underestimating the needs of Black patients because less had historically been spent on their care.[40] PEER-REVIEWED In a club, selection history, squad membership and competition entry are all cost-like proxies, and a system trained on them will reproduce whatever the club has been doing.

Sports science itself carries a comparable gap. An analysis of 5,261 publications covering roughly 12.5 million participants found female participants making up around 34 per cent of the total.[41] PEER-REVIEWED A model that has learned from that literature will be more confident about boys than girls, and it will not volunteer that fact.

CHAPTER ELEVEN

Federation-approved knowledge

The question is not whether a system can answer a coaching question. It is whose answer it gives.

A volunteer coach asking a general-purpose assistant about hurdle drills for under-13s receives an answer assembled from the whole internet, weighted by whatever happened to be written most often. Some of it will reflect the governing body's guidance. Some will reflect American high school practice, some will reflect a decade-old forum post, and the coach has no way to tell which is which.

That is the strongest argument for a governed knowledge environment in community sport. A system that draws first on the federation's own coach education material, its safeguarding policy and the club's own written method is giving an answer the club can stand behind, and it can say where the answer came from.

Three practices from machine learning transfer usefully into this setting even at club scale. Provenance means every answer names its sources. Escalation means the system routes anything outside its approved material to a named person rather than improvising. And documentation means the club can say what the system was built on, which is the principle behind model cards.[46] PEER-REVIEWED

A QUESTION FOR SUPPLIERS

Ask which sources an answer came from, and ask to see them. A system unable to show its sources cannot be governed, whatever else it can do.

11.1 The regional layer

A single club cannot build a knowledge environment and should not try. A regional association or a governing body can, and the resulting asset serves every club in the region. That is an argument for the work happening one level above the club, with clubs contributing their own method and receiving the shared foundation.

The same structure supports something coach education has always lacked, which is a library of real cases. Anonymised situations, with what the coach decided and what happened afterwards, are the material that develops judgement, and they currently exist only in the memories of experienced coaches who are gradually retiring.

11.2 What the wider governance frameworks say

Two documents are worth a club official's attention despite being written for larger organisations. The NIST AI Risk Management Framework organises the work into governing, mapping, measuring and managing risk across a system's life.[47] CONSENSUS The International Olympic Committee has published principles for artificial intelligence across the Olympic Movement covering privacy, integrity, fairness, robustness and clear human accountability.[48] CONSENSUS Neither is binding on a community club. Both give a committee a vocabulary for asking a supplier sensible questions.

Regulator guidance on explanation is more directly useful. Guidance produced jointly by the Information Commissioner's Office and the Alan Turing Institute sets out the types of explanation an organisation should be able to give about decisions made with artificial intelligence.[33] CONSENSUS An influential argument in the machine learning literature holds that post-hoc explanations of opaque models can mislead in high-stakes settings, and that interpretable models should be preferred where accuracy permits.[42] PEER-REVIEWED In a youth club, where the

stakes concern children, that argument points firmly towards simple, inspectable rules.

CHAPTER TWELVE

Affordable adoption

A club whose treasurer is worried about the electricity bill is not going to buy a performance platform, and should not be asked to.

Most technology aimed at community sport fails on cost, on onboarding or on the assumption that somebody will administer it. Clubs are run by volunteers who already have too much to do, and any system requiring a dedicated administrator has simply invented another unpaid role.

FIGURE 11 The club AI readiness model. The first two stages cost nothing and are where the largest gain sits.

Athleet.AI framework. ATHLEET.AI

The model above is deliberately unflattering about technology. Stage two, meaning one membership list, one calendar, one place session plans live and consistent consent records, is achievable in a term with tools a club already has, and it delivers more benefit than any subsequent stage. A club that skips it and buys assistance instead has bought a system that will reason across incomplete records and produce confident nonsense.

12.1 What adoption should look like

Three design requirements follow from the constraint. The first is that it must work on a phone at the side of a track in the rain, since that is where coaching happens. The second is that it must be usable by somebody who has not been trained, because nobody will be trained. The third is that the club must be able to leave, taking its records with it in a format it can read.

On pricing, my own view is that per-athlete pricing is the wrong model for community sport, since it penalises exactly the growth that participation policy is trying to encourage. A club or association licence, or a regional agreement funded once at that level, aligns better with how the sector is actually organised.

SPECIFICATION

Six questions a club committee should ask before signing anything

- What does this cost when our membership grows by 40 per cent, and what does it cost to stop?
- Who administers it, how many hours a month, and which volunteer is that?
- Where is our children's data stored, who can reach it, and does it train the supplier's models?
- Can a parent see, correct and remove what is held about their child, without contacting the supplier?
- What happens to our records if we leave, and in what format?
- Which of the three columns in the safe assistance boundary does each feature sit in?

CHAPTER THIRTEEN

Retention and lifelong participation

The sport's central measurement problem is that it counts the people who arrive far more carefully than the people who leave.

Retention is where the argument in this paper resolves. A club that keeps more of its members for more seasons has produced more athletes, more volunteers and more adults who stay active, and it has done so without identifying a single talent.

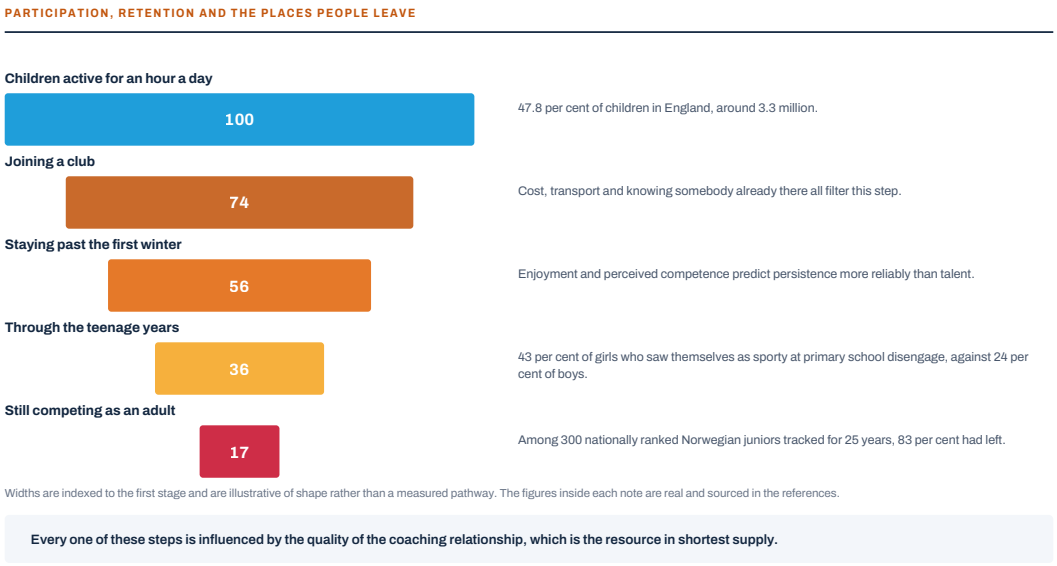


FIGURE 12 Where people leave. Widths are indexed to the first stage and illustrate shape rather than a measured pathway; the figures in the notes are sourced.

Sport England Active Lives CYP (reference 5); Women in Sport (reference 13); Enoksen, 2011 (reference 11). ATHLEET.AI

The dropout literature is consistent about causes. A systematic review identified insufficient enjoyment, low perceived competence, social pressure and competing priorities as recurring themes, concluding that these matter more consistently than structural barriers such as cost or transport.[9] REVIEW A separate review examined more than 100 candidate correlates of attrition and found strong supporting evidence for only a small number of them, among them autonomy, perceived competence, relatedness and a task-involving climate.[10] REVIEW A meta-analysis of 21 studies found enjoyment correlated with intention to persist at 0.45, with intention in turn strongly predicting behaviour.[12] REVIEW

Athletics-specific evidence is scarce and what exists is sobering. A 25-year study following 300 promising Norwegian track and field athletes reported dropout reaching 83.3 per cent by 2000, with the highest rate at age 17, and injuries, school demands and lack of motivation the leading reasons given.[11] PEER-REVIEWED That cohort is dated, single-nation and drawn from nationally ranked juniors rather than club members, so the specific figure should not be applied to a British club.

THE UNCOMFORTABLE ONE

Among 300 nationally ranked Norwegian junior athletes tracked over 25 years, 83 per cent had left the sport, with dropout peaking at 17 and injuries and school demands the leading reasons.

13.1 What a club can actually do

The correlates identified in that literature are all things a coach influences on a Tuesday evening. Perceived competence rises when an athlete is given work they can do well. Relatedness rises when somebody notices they were absent. A task-involving climate is created by what a coach praises, which is a choice made 40 times a session without thinking about it.

What a system contributes is memory and prompting. It can tell a coach that an athlete has missed three consecutive sessions, that a group's attendance has fallen since the clocks changed, or that four athletes have not had a personal conversation about their goals this year. Those prompts require no analysis at all, and they act on the variables the research says matter.

MEASURES WORTH USING IN A PILOT

- Retention across a season and across the winter, by age group and by sex.
- Attendance consistency, and the time between a drop-off and somebody noticing.
- Coach hours spent on administration, self-reported before and after.
- Coach confidence in planning for mixed groups, on a simple repeated scale.
- The number of prompts coaches recorded as useless, reported alongside the useful ones.

CHAPTER FOURTEEN

A national opportunity

The prize is coaching quality distributed more evenly across a country, without taking anything away from the local relationships that make clubs work.

Coaching expertise in athletics is unevenly distributed by geography, by club history and by luck. A young athlete in a club with an experienced sprints coach receives a different education from one 20 miles away whose club has willing

volunteers and no specialist. Nothing about that distribution is deliberate and very little of it has changed in 30 years.

The opportunity is to make the good club's method available to the willing volunteer, in a form they can use on a Tuesday, without pretending the software is the coach. That is a participation intervention rather than a performance one, and it should be evaluated as such.

14.1 Where assistance may act

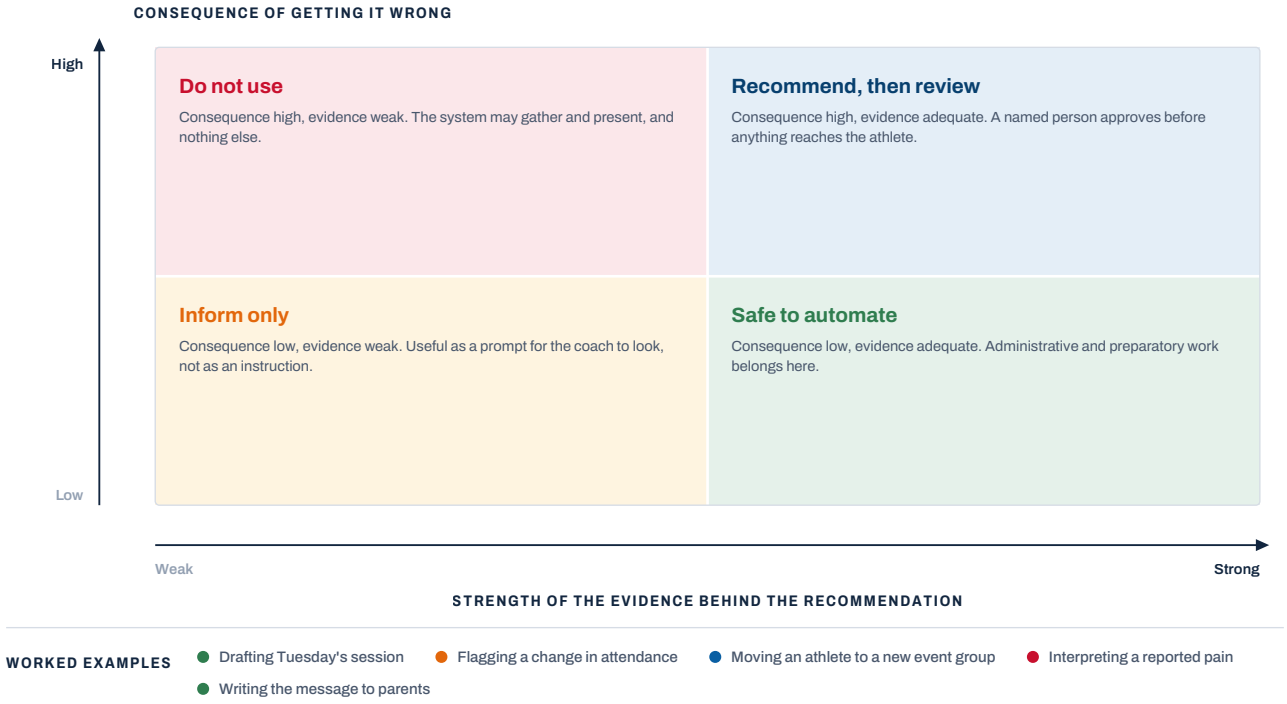


FIGURE 13 Consequence against evidence, with worked examples from a community club. In a youth setting the upper-left quadrant is larger than in elite sport, because the consequence of error is higher and the evidence is thinner.

Athleet.AI framework, used across the whole series. ATHLEET.AI

14.2 A regional cohort pilot

What the sector needs next is evidence rather than adoption. I would run a cohort pilot across eight to 12 clubs in one region, over two seasons, with an independent evaluation partner and a published result whichever way it goes.

PROPOSED STRUCTURE

- **Term one.** Records only. Membership, attendance, consent and session plans in one place for every participating club. No assistance of any kind, and a baseline taken on coach time, coach confidence and retention.
- **Terms two and three.** Drafting, differentiation and communication assistance, coach-approved without exception. Coaches log which prompts helped and which were noise, and the noise count is published.
- **Term four.** Reflection prompts, attendance alerts and development planning added. Safeguarding review at the halfway point by somebody outside the clubs.

- **Throughout.** A data protection impact assessment completed before anything begins, a named welfare officer with authority to stop the pilot, and no feature from the right-hand column of the safe assistance boundary.

Two features of that design carry the weight. The first term deliberately delivers no artificial intelligence at all, because a club that improves from tidying its records has learned something important and cheap, and separating that gain from any subsequent one is the only way to know what the technology contributed. And publishing the result whichever way it goes is what distinguishes an evaluation from a case study.

14.3 What good looks like in three years

A region that has done this well will look much as it does now. The same volunteers will be running the same sessions in the same rain. What will have changed is that a coach arriving new to a club inherits a method rather than a folder, that the athlete who was overlooked at 13 is still in the sport at 17 because somebody noticed she had stopped coming, that a welfare officer can explain in one sentence what happens to a child's data, and that a coach spends more of Tuesday evening watching athletes than they did in 2025.

None of that is a technology outcome. All of it is achievable with technology, some of it is achievable without, and a sector that keeps the distinction clear will spend its money considerably better than one that does not.

END MATTER

Club readiness checklist

Fourteen things to settle before adopting anything. The first six cost nothing and matter most.

- [ ] **One membership list**
  Held in one place, current, and readable by more than one person.
- [ ] **One place where session plans live**
  So that a coach who is ill on Tuesday can be covered by somebody who can find the plan.
- [ ] **Consent records that are current and findable**
  Covering participation, photography and filming, with a named person responsible for them.
- [ ] **Attendance recorded every session**
  The single most useful thing a community club can collect, and the one most often lost.
- [ ] **The club's own method written down**
  Even one page per event group. This is what any assistant should reason from.
- [ ] **A written safe assistance boundary**
  Which tasks a system may do freely, which need a coach's decision, and which are refused outright.
- [ ] **A data protection impact assessment completed before deployment**
  Checking for excessive collection and for bias, as safeguarding guidance recommends.
- [ ] **A named welfare officer with authority to stop**
  Not consulted afterwards. Able to halt a deployment at any point without a committee meeting.

- [ ] **A written answer on third-party model training**
  Obtained from the supplier in the contract rather than the sales conversation.
- [ ] **A route for a parent to see, correct and remove**
  Operable by the club, without the parent having to contact the supplier.
- [ ] **A storage and deletion rule for video of children**
  Club-controlled storage, a deletion date agreed when the footage is taken, and no consumer upload.
- [ ] **An exit plan**
  What the club takes with it, in what format, and how long the supplier keeps a copy.
- [ ] **An honest count of useless prompts**
  Recorded alongside the useful ones, because a tool producing 40 alerts a week will be abandoned by March.
- [ ] **A written definition of a disappointing result**
  Agreed before anything starts, by the people who will be tempted to redefine success at the end.

END MATTER

Glossary

Terms used in a specific sense in this paper, defined once and held to throughout.

Coach-led
An arrangement in which a named coach approves any output before it reaches an athlete or a parent, and that approval is recorded.

Data protection impact assessment
A documented assessment of the risks a processing activity creates for the people whose data it uses, completed before the activity begins.

Decision support
Assembling and presenting information so that a person can decide. Distinct from automation, in which the system acts.

Differentiation
Adapting one session so that athletes of different ages, abilities and experience can all do it safely and usefully.

Peak height velocity
The point of fastest growth in adolescence. Estimated non-invasively with substantial individual error, as Chapter 5 sets out.

Relative age effect
The advantage held by children born early in a selection year, largest in the youngest age groups and at the highest competitive levels.

Responsible AI
Systems designed so that their limits are visible, their outputs are contestable, and accountability rests with an identified person.

Retention
The proportion of members who are still participating after a defined period. The principal outcome measure proposed in this paper.

Safe assistance boundary
The written statement of which tasks a system may perform freely, which require a coach's decision, and which are refused outright.

Special category data
Data given additional protection under Article 9 of the UK GDPR, including data concerning health and biometric data used to identify a person.

Task-involving climate
A coaching environment in which effort, improvement and mastery are recognised, associated in the research with persistence in youth sport.

END MATTER

Method and evidence grading

How the sources were selected and checked, what could not be verified, and what the reader should distrust.

Sources were gathered from the peer-reviewed literature, national surveys and official statistics, governing-body publications, regulator guidance and primary legislation. Every reference in the list that follows was checked against the publishing journal, publisher or issuing body, and the bibliographic details were verified independently a second time before publication. Where a figure could not be traced to its original source, it was omitted rather than approximated.

What could not be verified

Six things were searched for and not found, and their absence shapes this paper. England Athletics does not publish a total for licensed coaches and leaders in the report available when this was written, so no such figure is quoted here. No published source gives the proportion of England Athletics coaches who are unpaid volunteers, so the cross-sport figure is used and labelled as such. No quantified United Kingdom figure for volunteer coach attrition in athletics was located. No independently evaluated deployment of an artificial intelligence tool in a United Kingdom grassroots athletics club appears in the published literature. No official average cost for a coaching qualification was confirmed, so cost is discussed as a reported barrier rather than as a sum. And no sport-specific guidance on artificial intelligence and children's data was found from any safeguarding body, so the requirements set out in Chapter 10 are drawn from data protection law and the Children's Code rather than from anything written for clubs.

What to distrust in this paper

Three things. The coach time reallocation model in Chapter 2 is illustrative and no published study reports those proportions for volunteer athletics coaches. The retention funnel in Chapter 13 uses widths that illustrate shape rather than a measured pathway, although every figure quoted within it is sourced. And the maturity evidence in Chapter 5 comes from male academy footballers, so its application to mixed-sex community athletics is an inference rather than a finding.

A note on the survey sources

Several important figures in this paper come from national surveys and from charity-commissioned research rather than from peer-reviewed studies. Those sources are labelled with the survey tag throughout. Self-reported data on sensitive subjects carries known bias, sampling methods vary, and methodology changes between survey cycles mean that comparisons across years should be treated cautiously. The figures are used because they are the best available, and their status is stated rather than disguised.

Conflict of interest

The author is the founder of Athleet.AI, which builds software in the area this paper examines. The paper recommends against several categories of product that would be straightforward to build and sell into youth sport. Readers should

weigh the argument accordingly and are encouraged to test the citations rather than the author.

END MATTER

About the author

Paul Forrest is the founder and Chief AI Officer of Athleet.AI. He works with organisations on the deployment of artificial intelligence, having begun in business process reengineering in the 1990s and moved into natural language and machine learning work from 2014, building small, domain-specific models in preference to general-purpose ones.

He is a qualified athletics coach, holding level three qualifications in sprints, hurdles and endurance, and he coaches as a volunteer at club level. The sessions, the Sunday night planning and the parent messages described in this paper are ones he writes himself, which is the reason it declines to recommend several things that would be straightforward to sell into youth sport.

He is the author of *Tales from AI Development Hell* and *AI Made the Decision: Who Answers When Nobody Owns the Outcome?*, and holds an adjunct professorship teaching digital acumen and digital entrepreneurship.

END MATTER

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WHERE THIS GOES NEXT

A club and regional cohort pilot

The argument in this paper is testable, and the only honest way to test it is across a group of ordinary clubs with an independent evaluator and a published result.

Athleet.AI works with clubs, regional associations and governing bodies to run a two-season cohort pilot using the structure in Chapter 14. The coach, athlete and parent experiences are parts of one governed club environment rather than separate consumer applications, every output passes through a coach, and the safe assistance boundary is written into the deployment rather than left to a setting.

What a pilot involves

- Eight to 12 clubs in one region, two seasons, and an independent evaluation partner.
- A first term of records only, so the gain from tidying up can be separated from the gain from any technology.
- A data protection impact assessment completed before anything begins, and a named welfare officer with authority to stop.
- Measures on retention, attendance consistency, coach administrative hours and coach confidence.
- A published result whichever way it goes, including an honest count of the prompts coaches found useless.