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Enhancing our understanding of sport practitioner perspectives on developing effective sporting environments

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ABSTRACT

Research has increasingly focused on the environmental features within talent and performance development settings. However, practitioner perspectives on their role in optimizing these environments are scarce. This study aimed to examine practitioner perspectives of the role of the environment, specifically, how they plan, deliver and review (p-D-R) to optimize environmental conditions for athletes. Ten sports practitioners (including managers, coaches and multidisciplinary support staff) took part in semi-structured interviews. Data was analysed using a reflexive thematic analysis and generated themes associated with Planning (Conceptualization, Planning and Meeting Athlete's Needs), Delivering (Explicit, Implicit, Support, Communication, Holistic Approach) and Reviewing (KPIs, Evaluation & Monitoring, Rolling Review, Review Process). Findings suggest that to offer the best possible experiences to participants, practitioners must have a clear view of their objectives and involve all stakeholders associated with delivery at the planning stage. Much of the delivery aspect aligned with notions of effective TDEs suggesting practitioners had a clear awareness of what works for them in their contexts. Reviewing the environment appeared to be the activity practitioners undertook the least, this may reflect the complex and dynamic nature of the environment in sports settings.

Introduction

The sporting environment has the capacity to influence all who operate within them (Henriksen et al., 2010a). A successful TDE is one that provides participants with the resources for coping with future transitions within and outside the sport (Hauser et al., 2022). Performance environments seek to tie these facets together to elicit high-level execution of physical, technical, tactical and psychological skills in sporting competition.

When exploring research that examines characteristics of effective environments, a range of views and methodological approaches are apparent. Research investigating the nature of the sporting environments has tended to focus on cross-sectional approaches to understanding athlete perceptions of their environment using tools such as the Talent Development Environment Questionnaire (TDEQ) (Martindale et al., 2010) or the TDEQ-5 (Li et al., 2015). Findings suggest that participants often report Holistic Quality Preparation (defined as, the extent to which intervention programmes are prepared both inside and outside of sports settings) domain of the TDEQ/TDEQ-5 as the least positively perceived aspect of their environment (e.g., Curran et al., 2021; Gledhill & Harwood, 2019; Mitchell et al., 2021). Further, Martindale et al. (2012) compared higher and lower quality environments within swimming and rugby and found holistic development to be the most significant predictor of athlete progression. With an ever-increasing awareness of the role of mental health and wellbeing in performance (see, e.g., Bergeron et al., 2015; Kuettel & Larsen, 2020). Long Term Development (e.g., coaching programme) and Support

Network (e.g., access to a range of professionals such as a sport psychologist) are generally reported as the most positively perceived area of TDEs. For example, their study using 374 youth athletes, Wang et al. (2011) reported a focus on long-term development and fundamentals and support network to be the most positively perceived subscales and these also predicted intrinsic goals striving. Given that TDEQ has been used extensively with athletes, it is surprising that only one study has attempted to use the TDEQ to drive excellence in an environment. In a sample of professional rugby union players (Hall et al., 2019), 16 baseline weaknesses included forward planning, welfare, psychological skills provision, clarity of required process-focus, player empowerment, role models and external expertise, and coherency of messages. Post intervention, 15 of the 16 targeted weaknesses improved over the intervention with seven items showing significant improvement. The results demonstrated the efficacy of the TDEQ as a tool to evaluate and inform intervention development. Whilst gleaning vital information from athletes' perceptions of their environment, TDEQ-based studies are not without limitation, for example, the TDEQ was originally validated as a general sport measure and may not meet the unique cultural elements of particular sports. Further, a problem will all survey-based work is that the TDEQ only measures against the questions asked at one point in time.

More qualitative approaches such as interviews have been conducted with coaches and multidisciplinary team (MDT) members to understand the structure of the environment.

Such members might typically include sport science, strength & conditioning, sport psychology, welfare and nutrition practitioners. For example, Pain and Harwood (2008) interviewed coaches (n = 6), sport scientists (n = 3) and players (n = 4) to understand the performance environments in England youth soccer teams. They reported eight distinct components that conceptualized the environment (1) planning and organization, (2) physical environment, (3) tactical factors, (4) development and performance philosophy, (5) psychological factors, (6) physical factors, (7) social factors and (8) coaching. Using a wider sample of 16 development coaches from a range of UK-based sports, Martindale et al. (2007) reported on-the-ground support for Martindale et al. (2005) literature based five main generic characteristics of effective TDEs: (1) Long-term aims and methods; (2) Wide-ranging coherent messages and support; (3) Emphasis on appropriate development, not early success; (4) Individualized and ongoing development and (5) Integrated, holistic and systematic development in practice.

Immersive and ecologically orientated frameworks such as the Environment Success Factors (ESF) and Athlete Talent Development Environment (ATDE) (Henriksen, 2010) have also emerged. The ESF advocate preconditions (financial, human, material), process (training, competitions, camps), individual development and team achievements, organizational development and culture and team achievements. The ATDE emphasizes the importance of social, relational and ecological features for effective TDEs, including the micro-macro context, role and interaction of stakeholders, and organizational culture. Such frameworks have been utilized in specific contexts such as Sailing (Henriksen et al., 2010a) and Soccer (Larsen et al., 2013) to understand and assess the TDE by accessing perspectives of athletes, coaches, other stakeholders as well as observation and document analysis. This research approach has consistently supported the use of a holistic approach within successful TDEs (see, e.g., Aalberg & Sæther, 2016; Henriksen, 2010; Henriksen et al., 2010a, 2010b; Larsen et al., 2013). Successful TDEs deploy resources to support athletes board development which in turn helps them to navigate their journey through a TDE. A limitation of this work is that we often see a broader view of environment which might not fully capture the detailed views that a single practitioner may hold. Further, using models such as ATDE and ESF suggest that these are absolute.

More recently, Sargent Megicks, Lara-Bercial, et al. (2023) provided guidelines for effective Holistic Talent Developments (HTDEs) (promoting Athletic Skills, Health, and Wellbeing & Life Readiness) to include a holistic philosophy of athlete development, stakeholder alignment, a climate of care, a long-term learning and development process, appropriate challenge, and integrated life skill development. Despite the clear potential for utility, the HTDE guidelines are yet to be seen in practice applied settings.

Findings from perceptions from other stakeholders about TDEs are now emerging in the literature. For example, Sargent Megicks, Till, et al. (2023) used the TDEQ-5 (athlete, coach and parent versions) across a range of European TDEs and noted coaches had significantly higher perceptions of their environments than parents and athletes. In another study, Martindale et al. (2023) used a mixture of a new Talent Development Environment Questionnaire-Parent and open-ended questions with 485 parents of talented children across a range of sports. Both works cited Support Network as being the least positively perceived aspect amongst parents. These works may provide a mechanism which could help to provide further importance on role for parents in the sport development process.

Despite these advancements over the past 20 years, there has been less emphasis on practitioners' perspectives of how they might shape, develop or create effective or successful environments when compared to what sport participants think about their environments. This is surprising as coaches (and associated sport practitioners) are central to the curation and operationalization of the environmental conditions in which sports participants experience (see, e.g., Lara-Bercial & McKenna, 2022a, 2022b).

In summary, environmental factors are an area that is controllable by the sports practitioners who operate within them. Unfortunately, there remains a comparative lack of information associated with how coaches and other practitioners plan-do-review environments for their participants. Resultantly, this study aims to address this dearth by seeking to understand practitioner perspectives of the role of the environment, how they would plan, deliver (do) and review their efforts in optimizing the environmental conditions.

Methods

Philosophical positioning

Informed by a relativist ontology and constructionist epistemology, which are underpinned by an interpretive paradigm, we believe that reality is based on subjective experiences (Sparkes & Smith, 2013). Further, understand knowledge to be constructed through the social interaction between researchers and interviewees (Sparkes & Smith, 2008). Thus, the findings within this manuscript represent our interpretations of the practitioners' perceptions.

Recruitment and participants

After institutional ethical approval (LBU6422), participants were recruited through a purposeful sampling methodology through email, telephone and SMS message (Patton, 1990). Participants, to be referred to as practitioners, had to be working within a current setting on a full-time or part-time basis and had to have input into the design of the environment in which they worked. An initial list was drawn up by the first author and was refined by the author team. A total of 12 people were contacted. Two did not have the time to be interviewed. This process yielded a total of 10 practitioners working in performance and talent development settings who had input into the design of the environmental conditions within the contexts of their employment (see Table 1). Limited information has been provided intentionally to help protect the identities of the participants. As a result, we felt this was a suitable sample to answer our research question: How do sport practitioners plan, do (deliver) and review their environments? After receipt of informed consent data collection took place.

Table 1. Overview of participants.

Participant	Role	Gender	Current Context	Sport Type	Age Range
1.	National Programme Manager	Male	Adult, National, Performance	Athletics	18+
2.	Head of Coaching	Male	Talent Development, Club	Football	8-18
3.	Academy Coach	Male	Talent Development, Club	Football	8-18
4.	1st Team Coach	Male	Professional	Rugby Union	18+
5.	International Youth Coach	Male	Talent Development	Football	U15
6.	Performance Analysis at International Level	Male	Adult, National, Performance	Swimming	18+
7.	Academy Programme Manager	Male	Talent Development, Club	Rugby League	16-22
8.	Academy Sport Psychologist	Male	Talent Development, Club	Rugby League	16-22
9.	Sport Psychologist Youth International level	Female	Talent Development, International	Football	U15
10.	Coach Youth International level	Male	Talent Development, International	Football	U15

Data collection

We used semi-structured interviews, gain context rich accounts of practitioner's views as well as allowing the opportunity to ask further questions and probe for further information such as "can you tell me more about ...". The interview guide was constructed using relevant literatures (e.g., Henriksen, 2010; Henriksen et al., 2010a, 2010b; Larsen et al., 2013; Martindale et al., 2005). Questions were centred broadly around Planning (e.g., "can you tell me what you want your environment to feel like?"), Delivering (e.g., "what activities to do undertake to help shape the environment?") and Reviewing (e.g., "how do you know your activities are having an impact") and were proceeded by questions to gain an insight into the structure and purpose (e.g., "How many athletes do you have"). Interviews took place over Microsoft Teams or face-to-face. Transcriptions yielded 297 pages of double-spaced text comprising 78,728 words. The average duration of each interview was 58.2 minutes.

Data analysis

We conducted a reflexive thematic analysis (Braun & Clarke, 2019). Following guidance from Braun and Clarke (2021), the first author immersed themselves in the data through reading/re-reading printed transcripts and listening to audio recordings. Each transcript was then "open coded" by using NVIVO12 to help manage the data and more easily create nodes, descriptive labels were added to segments of text that represented insights associated with the curation of the environment. To create themes, nodes from transcripts were grouped together where there were patterns. Finally, and following more deductive approach, to further align data to our research aims, these themes were further organized into "Planning", "Doing" and "Reviewing" using the work of Abraham et al. (2014) as a guiding framework. Specifically, the notion of planning is to achieve learning focused outcomes and relies on reflecting on past knowledge and previous outcomes, the present situation and anticipatory reflection on the learning to happen. Effective planning should also consider the "who", "what" and "how" to develop a coherent, progressive and "nested" coaching plan (Abraham & Collins, 2011; Till et al., 2019). The doing (delivering) aspect is the part of the coaching process that is clear to see. Finally, the Review phase incorporates reflection and evaluation after a period of performance or "Doing" to support ongoing preparation (planning).

The thematic structure was reconfigured numerous times by going back and forth to the data allowing for reflection to further make sense of the findings (Braun & Clarke, 2019). To further challenge any assumptions that may have been made by the first author, the research team acted as "Critical friends" allowing for building meaning together based on initial interpretations and throughout the analysis process. These activities enabled the first author to talk through the findings thus contributing to ensuring that the thematic structure made sense of the participants' experiences.

Research quality

Qualitative research seeks to obtain transparent accounts of people's perspectives. Firstly, we cannot deny that the researcher has a part of play in the research process. I (first author) acknowledge my own understandings of talent development and performance settings, having had around 19 years' consultancy experience in such contexts. We felt, being something of an insider could facilitate honest engagement from the participants by offsetting any interaction effects of a researcher being perceived as an "outsider" and thus increase rapport between interviewer and interviewee (Burawoy, 1998). When considering the quality of this study, we refer to its worthiness in light of providing new and novel information in specific contexts (Sparkes & Smith, 2013). We feel this was achieved by comparing our findings to, to the best of our knowledge, the current literature base. Using contemporary views of developing rigour in qualitative research (Smith & McGannon, 2017; Smith & Sparkes, 2020), the findings provide a "substantive contribution" to the field, with new insights provided as a result of the work. Further, coherence was achieved by employing methods that facilitated the accomplishment of the study aims as well as conducting the research in line with our philosophical position throughout. We spoke to practitioners in the field to obtain their views on aspects associated with planning, delivering and reviewing their environment. Finally, to offset any personal bias from the first author, the second and third authors met regularly and repeatedly reflected on how our own knowledge, skills and experience had shaped the aims of the study, how we interacted with participants in the interviews, and the themes generated during the analysis process demonstrating reflexivity. The second author is a senior lecturer in sport coaching with a specific expertise in talent development environments. The third author has extensive applied knowledge of TDEs as well as research experience in this space. When working specifically with the

data, a peer debriefing activity was done via regular meetings with author team to talk through initial codes right through to final product where would check and challenge our interpretations (Smith & McGannon, 2018).

Results

Data was organized into three dimensions of Planning, Doing and Reviewing the environment. Figure 1 provides an overview of key themes resulting from the data analysis.

Planning related to activities associated with planning how the environment will feel and the intended outcomes for participants as a result of being in the environment. From the analysis, we identified three themes. These were, namely, Conceptualizing the Environment, Planning Activities and Understanding Athlete Needs. Table 2 provides an overview of the themes associated with planning.

Conceptualizing the environment

Practitioners, in the main programme managers and leaders, had clear views around its impact on development and performance. For example, a youth international level sport psychologist who works closely with coaches spoke of the *importance of the environment* in allowing young players to meet potential. "If you're not explicitly thinking about your environment, your kind of leaving a huge, 70% chunk of behavior that you're not even working on" (Sport Psychologist, Youth International level).

Practitioners presented a holistic view of the purpose of their environment and what might indicate success. For example, one programme manager acknowledged various points of success for participants.

What do we want them to achieve, whether they come through and go on and play for England, or go on and play in the Premiership, or they'll come through and have a good experience, and are set up for achieving in other ways. (Academy Programme Manager)

Another programme manager spoke of their recognition that not everyone would make it but still may have a positive outcome. "Recognising that not everybody will do that but along the way it could be that, if nothing else you perhaps help them through that junior/senior transition, so you've got an athlete then who's happily competing as a senior athlete" (National Programme Manager).

When talking about perceived ingredients of a successful environment practitioners held a longer-term view of development for example, "I've always been interested in – it's almost filling the gaps, recognizing what potential a person may have, and then how we create a pathway that can guide, fill in the gaps, support somebody, to get through" (Academy Programme Manager). When looking at the development pathways of successful players, one coach noted that successful first team performances started when players were developing over the long term in the academy programme. In this example, the use of challenge has been described.

PLAYER NAME made his debut on Sunday afternoon, 18, 19, 20-year-old lad, took to it like a duck to water, because he's been through a situation that's put him in stressful situations at periods, removed him from that situation when he needed to be removed from the stress, but that stretch and pulling of the players, both mentally, physically, technically, tactically, starts really young. (Academy Coach)

Another ingredient around successful TDEs was the notion of empowering staff as a key consideration for the TDE to allow them to deliver the best possible services to athletes.
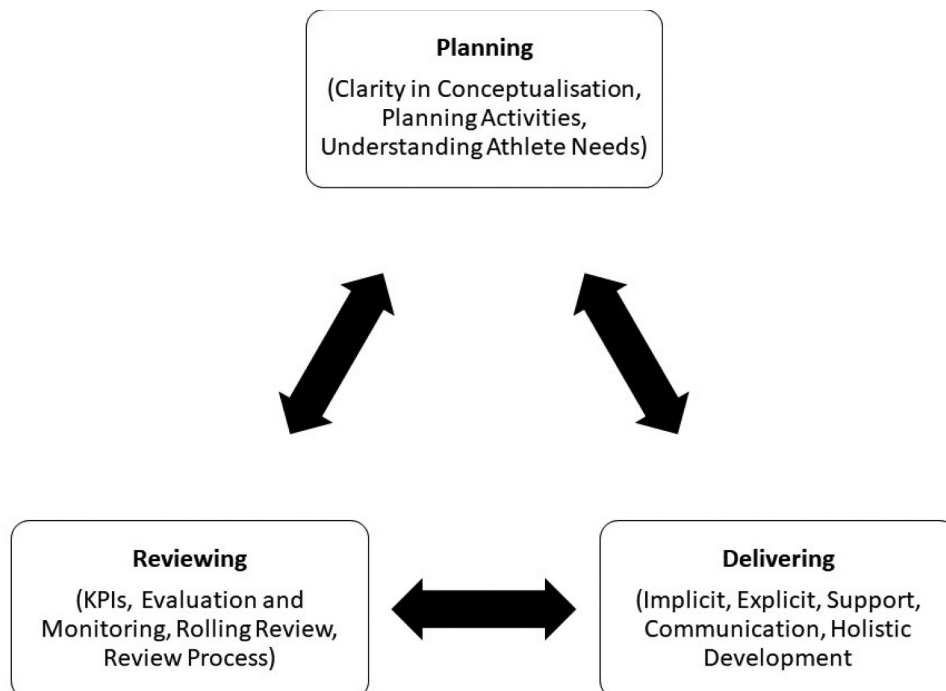

Figure 1. Overview of practitioner perspectives on p-D-R activities associated with the sports environment.

Table 2. Practitioners' perspectives around planning the environment.

Planning the environment
Conceptualization
• Expectation
• Holistic view of success
• Enjoyment
• Clear Values
• Wider Role of the Coach
• Importance of the Environment
• Long-term view of Development
• Empowering Support Staff
• Programme Alignment
• Resources
○ Recruiting the right staff
○ Consistent Staff Team
○ Prioritizing Resources
○ Low coach/athlete ratios
• Organizational Considerations
○ Top-down Influence
○ Managing up and down the organization
○ Working across different contexts
Planning Activities
• Planning the environmental features
○ *Planning for breaks and downtime*
• Pre-Planned Coaching Programme
• MDT Meetings
• Age and Stage Planning
• Individualized Development Planning
• Strength-Based Approaches to Planning
Understanding Athletes Needs
• Profiling
• Obtaining Feedback
• Activity meeting Athlete Needs

The resources associated with designing and implementing activities associated with a high-quality TDE went well beyond the facilities associated with training to cover a range of support services. One programme manager noted the array of support services for their athletes. "So that is the sports sciences, so physiology, biomechanics, sports psychology, sports nutrition, performance, lifestyle and then strength and conditioning coaching and physiotherapy, soft tissue support as well" (National Programme Manager). Recruiting the right type of staff was also a key consideration to support notions of alignment and to deliver the highest quality sport programmes.

> I believe if you recruit good people magic can happen, so that's probably right in terms of that because I think if at their core, they're a good person the technical and the tactical, all the other stuff that can be developed. (Head of Coaching)

At times resources needed to be prioritized to certain areas of even participants. "There are priority levels, and obviously the better people get more of the service, and that's just kind of the cutthroat nature of it" (Performance Analyst, International Level).

Practitioners operating within the TDEs reported a level of top-down influence which a need to plan out and align environmental features to meet the needs of those further up the organization. This was sometimes perceived as challenging and conflicting with the messy nature of developing talent.

> There needs to be an element of openness and understanding within what the pathway is there to do. The expectations of a first team coach or a CEO, a Director of SPORT is, I need these players to be ready on this date, and that's the reality of it, and then at the end

of the – that's our job at the end of the day. That's why they're going to give us the money. (Academy Programme Manager)

Another source of influence was the historical context of the environment that upheld certain intangible standards, for example, "There is something about being at SPORTS CLUB where there is an expectation of the way you approach your work, the way you play the game and the standards which you uphold when you're out there interacting with people" (Academy Coach). A similar view was reported by a head coach.

> I think the pedigree is borne out of a very strong school system, there's a very good academy system. 95 percent of the squad is home-grown, and we produce great talent, there's great coaches in SPORTS TEAM, but at academy level, and senior level, a strong sense of identity. (1st Team Coach)

Planning activities

Formalized planning activities to actively plan the environmental features of the TDE. One head coach spoke of the importance of objectives when planning the environment. "So ultimately, everything, the environment, your coaching practice, everything comes back to your objectives, so whatever your objectives are, everything's – that's what it's all about" (Head Coach, Youth International Level). Strategies to plan took many forms such as whole staff team events to review and monitor player development.

> The multidisciplinary team meetings that we have on a regular basis, is where we put the kids at the heart of that, and every, every department discusses the child from their perspective. And I think those conversations are so powerful for us as coaches to understand what's going on around the SPORT TYPE side of it. (Academy Coach)

At coach level, planning would also be aged and staged to meet the differing needs of participants, for example, one head coach talked about provide differing objectives to different age groups.

> What England 17s objectives were, were different to what England 20s objectives were. England 20s is to win the Junior World Cup; England 17s was to develop a broad based of players who could play the game in many different ways. (1st Team Coach)

Planning was undertaken at an individual level. Such individualization took a strength-based approach to focus on the assets already possessed by the players. One coach outlined an example of this approach.

> What gets you into a first team is what you're really good at. So, let's say [PLAYER NAME] who's playing in the first team now, really good at dribbling, not so great defending 1 V 1, but he's not in the team to defend 1 V 1, he's in the team because he's really good at dribbling. So, let's take what they're really good at, and make that even better through that process, rather than focusing all the time on negatives. (Academy Coach)

Understanding athletes needs

Practitioners, largely coaches who are on the ground, took steps to understand their participants. For example, profiling of athletes against benchmarks was used to assess current development/performance characteristics. "The data and the

tracking and the profiling that we do on the athletes, and if you look at the dashboard and a lot of things are green, then we know we're in a good place" (Performance Analyst, International Level). Another coach valued the use of player feedback mechanisms and how the information gleaned may support programme development,

> Letting them have an opportunity to feed back to us to say, "Actually, we'd like to do this, we want to do that. Can we incorporate that?" And then as a staff, we can take those suggestions and say, "How do we change the programme now to give them the best experience as kids, as well as players?" (Academy Coach)

The general dimension of "Doing" related to all practical activities' coaches employed to shape and facilitate the environment according to their plans. From the analysis five themes were identified. These were, namely, Planned Explicit Strategies, Planned Implicit Strategies, Support, Communication and Holistic Development. Table 3 provides an overview of the themes associated with delivering the environment.

Planned explicit activities

Clear messaging through mediums such as an induction programme which served to present the aims and objectives to parents and players as well as offer an opportunity for questions. For example, "At the start of every year, we have an induction for new players where that's more us in front of a group of parents and offering questions off the back of our presentation" (Academy Coach).

It was also deemed important to repeat messaging to players to ensure clarity and hopefully instil desired behaviours in players. One head coach noted the repetition of messaging as being important to embedding thinking and behaviours "Show who you are!" because we must nail that line, I don't know how many times. And I always say, By the time you're bored of saying it, that's when you know it's in your culture" (Head Coach, Youth International Level).

Planned implicit activities

Practitioners also adopted *implicit [planned]* approaches shaping the environment which were not explicitly taught yet still very much planned. One coach spoke of the importance of providing a safe and secure environment. "We've got to hold up our end of the bargain as well. We've got to create the right environment. We've got to have a safe and secure environment for your boy" (Academy Coach). A practical example was provided by a head of coaching when working to find important passes and managing the risk-reward aspects of play.

> One of the things we talk about, certainly the advanced midfielders, is having a killer pass, but if they're not trying the killer passes when they're younger, so this is where again you get down to your managing mistakes with younger players, we've got to secure an environment where it's OK for them to miss three or four or five because if they get one pass through and their mate gets in and it's a goal. (Head of Coaching)

Table 3. Practitioners' perspectives around delivering the environment.

Delivering the Environment
Explicit Planned Strategies
• Educational workshops
• Use of a Virtual Learning Environment (VLE)
• Induction Programme
• Clear Messaging
Implicit Planned Strategies
• Psychologically safe environment
• Problem solving approach to sessions
• Proximal role models
• Professional "feel"
• Challenge
Support
• Work with parents
• Importance of the Coach–Athlete Relationship
Communication
• Informal communication between staff
• Informal communication between staff and players
Holistic Development
• Psycho-social development
○ Autonomy Support
○ Growth Mindset
○ Tours for social development
• Encouraging transfer

Immersing players in challenging situations where they need to adapt to was another strategy used by coaches to help players cope with specific situations. For example,

> A lot of what we'll do is situational based as well, or challenge based, so if we think a group of kids or a certain number of kids within a group don't react well to being one nil down or two nil down, how do we improve that? Well, you put them in that situation more often (Academy Coach).

Support

Offering a supportive environment for participants to thrive in was seen as an important factor to consider, this came in the form of having a range of support staff to look after player needs for example,

> We have a Nutritionist for the academy; we have a 9–16's performance support coach which is a Sports Scientist and then we have an Academy Psychologist as well and that's a lot of people for a 9- to 16-year-old player. (Academy Coach)

The importance of relationships was also seen as a vital aspect of supporting athletes.

> That's a big thing across all of our coaches, is that coach/athlete relationship. It's really important. It's critical. It's probably more important than any of the other aspects in the programme, is to have a really solid relationship, so that the athlete understand the coach and their viewpoint on things, and the coach understands the athlete. (Performance Analyst, International Level)

This was further supported, in this case by a programme manager, by the notion of simply being around the training environment which facilitated conversations about support. For example, "I think a lot of it is about being present, a lot of it is often discussions about the support that they can receive, and they'll ask me" (National Programme Manager).

Using the wider support network was also seen as important especially with parents but also other contexts athletes may be in to help align and reinforce messages for the participants.

It's also supporting their families and the parents, potentially all the carers, and also different environments they're in as well. So, we talk about creating an environment, but it's such a wide-reaching aspect, that communication doesn't just happen with the athlete, it happens with potentially mum and dad or a carer; it happens with their schoolteachers or their coaches outside of that, just so that we can try and provide something seamless. (Academy Programme Manager)

Holistic development

Practitioners at all levels (e.g., Managers and Coaches) viewed holistic development as being an important outcome of their environment. For example, one programme manager spoke to identifying specific psychological skills to be developed on the programme for example. "And so, a lot of my work, especially from a presentation perspective, to the under-18s and the under-16s were in and around these characteristics. So, what is self-awareness, self-organization, growth mindset?" (Academy Programme Manager). From a coach perspective, an academy coach spoke of developing specific characteristics in sessions.

Whether you're winning or losing, got a big stretch psychologically, the stress of, "I'm getting battered here", or "I need to go at them here and make decisions quickly". So that sort of stretch and development, and that reflection when they're talking together and you're coaching them. (Academy Coach)

Coaches attempted to further support the wider development of players by adopting autonomy supportive approaches towards their coaching. For example, one coach reported.

It's far more powerful for us to create a coaching environment where coaches, facilitator; coach sets problems, players find solutions, and so what we're almost doing implicitly is create an environment where the players are, "Well, that didn't work. Well, why didn't that work?" (Coach, Youth International Level)

On a practical level, coaches would facilitate autonomy in sessions by setting problems for players to solve for example.

They'd have 60 seconds, their own huddle, whether we throw the question in there for them to try and answer, and it's their responsibility to answer, whether it is right at the very start of the session, the plan for the session or the question for the session is, how are we going to do something? (Academy Programme Manager)

Tours were also used a vehicle to offer more emphasis on social development for example, "You've got your international tours, you've got your tournaments in this country, so we'll talk about the social stuff as much as we do, not as much, but the football" (Head of Coaching).

Reviewing the environment related to activities, practitioners undertook to make sense of the impact of the environment on participants. From the analysis, several core strategies were identified when evaluating success. These were often centred around player development over the relative success of an environment. Table 4 provides an overview of the themes associated with reviewing.

Having clearly defined Key Performance Indicators (KPIs) for athletes were used in some sports where performance measures were more easily defined, for example swimming. For example, "Performance indicators revolve around athletes making world

Table 4. Practitioners' perspectives around reviewing the environment.

Reviewing
• Key Performance Indicators
• Evaluation and Monitoring
• Rolling Review
• Review Processes

class programme" (National Programmed Manager), whereas in an invasion game context these were based on observation.

What do we need to look at? What are our main focuses technically? And at nine to 12s, that's all encompassing. We're not looking at position specific, we're looking at what's his first touch is like, is he positive with the ball, can he take players on, can he defend one V one, is he resilient, does he communicate well. (Academy Coach)

A rolling/continuous review strategy was used to continuously review sessions, for example,

We came out of some sessions, and as coaches, we would come out and we'd reflect, and you'd look at each other halfway through the session, and you'd think, "This is probably the messiest session we've had. There's balls everywhere". And you're trying to think, at that stage, you're trying to think, "Is it working? Is it not working? Are we getting success? Are we getting the learning?" (Academy Programme Manager)

Another practitioner, in this case a coach, reported using a rolling review with the wider staff team to explore how athletes were setting in on an international camp.

There's some super, super emotionally intelligent people within those staff group [s], and they'd see different environments, they'd see different bits of the camp, they'd see different, almost, snapshots to what other people would do, and that would almost always be part of the rolling review each night, where we'd say – sorry, there's a little bit of drilling – that would always be part of the rolling review, where it might be like, is there anyone that we feel isn't settling in? (Coach, Youth International Level)

A programme manager also spoke of a "gut feeling" as part of understanding if the environment was serving its intended aims. "I guess you just get a sense of who's happy and who's not and are they enjoying, are they happy to talk to you and so I think just your gut will tell you an awful lot there" (National Programme Manager).

Practitioners also noted the challenges with trying to assess success of an environment that is often intangible. For example, a sport psychologist spoke to the challenge in the assessment of the development of self-organization. *It's really difficult – how do you measure the development of someone's self-organization? What does it actually look like?* (Academy Sport Psychologist).

Discussion

The aims of this study are to understand practitioner perspectives of the role of the environment, how they would plan, deliver (do) and review their efforts in optimizing the environmental conditions for their participants. The result from the analysis shows a wealth of strategies used by practitioners, at different levels of TDEs, associated with the environment created offering a unique and novel insight into such how the sporting environments may be curated and operationalized.

The following sections will consider the themes in light of current literature in this area and highlight potential implications for practice and research.

Regarding Planning, practitioners valued the importance of the environment and had a clear view of what they wanted the environment to look like and feel like for their specific contexts and were able to build clear objectives. Such findings carry notions of mental models (MM) and shared mental models (SMM). For example, Cannon-Bowers et al. (1993) used the term shared mental model (SMM), describing it as a knowledge structure held by members of a team that enables them to form accurate explanations and expectations for the task, and in turn to coordinate their actions and adapt their behaviour to the demands of the task and other team members. In the present study, the team may be viewed as the sport practitioners having a shared view of what features the environment should contain and what outcomes such features may elicit. Such findings agree with works seen in Rugby League TDE contexts where Taylor and Collins (2021) and wrote about the importance of coherence in the TDE process. Practitioners support the view that the development of talent is a slow process and often held *longer term views of development*. Long term development planning has widely been reported as advantageous for those operating in talent development environments (see, e.g., Martindale et al., 2005; Sargent Megicks, Till, et al., 2023). Acknowledging the need for alignment across the various levels of the sporting organization was another planning matter for practitioners and specifically to align with those staff in senior or performance squads was an important factor in shaping the environment at planning stage. Such alignment has also been reported as essential when operating successful TDEs, for example, the notion of *Alignment of Expectation* (defined as the extent to which goals for sport development are coherently set and aligned; Li et al., 2015).

Careful use of resources was a key consideration for the practitioners in this study. This considering was more associated with staff, rather than physical resources. According to Henriksen's (2010) ESF model resources are typically financial, human and material. From a practical planning perspective, the MDT meetings were seen as a useful mechanism to understand different viewpoints of each support area in ensuring greater clarity and ultimately better service for the athletes. The benefits of the multidisciplinary team have been seen elsewhere in the coaching literature, for example, with S&C coaches where the view was held that "each disciplinary perspective offers a great deal and should be harnessed to formulate a shared understanding within a multidisciplinary team about 'what' to prioritize and work on, and 'how' to support the athletes to meet their needs" (Till et al., 2019). The findings from this study suggest such activities are no different when planning for environmental features. Building on planning from an MDT perspective, there was also promising work on planning activities to meet different ages and stages in the various contexts within this study. Such developmentally appropriate planning demonstrates an awareness of varying needs of athletes at different stages and often requires an in-depth knowledge of items such as growth and maturation, psychosocial development, and support needs. Having an appropriately skilled support network appears to give programmes, and subsequently athletes, the best chances of receiving high-quality development experience.

The aspect of delivering (doing) the environment on the ground produced a range of approaches which can be theorized as being along an implicit/explicit continuum which has previously been used to frame life skill transfer in youth sport settings (Turnnidge et al., 2014). Explicit strategies such as placing emphasis on continual repetition of key cultural messages or bespoke workshops in programme delivery were key strategies adopted by practitioners in this present study and has also been seen in other youth sports settings associated with supporting particularly, psychosocial development (Larsen et al., 2013; Petitpas et al., 2005) and life skills (Pierce et al., 2017; Weiss et al., 2013). In the present study, this strategy was used in other aspects such as reminding people on an international youth camp to "show what they can do". Implicit endeavours, focusing on experiential learning, for example, Jones and Lavallee (2009) advocated the notion that sport experiences can act as a trigger for the development of personal skills and as such proposed that knowledge can be gained through the lived experience of sport. There are also existing frameworks that practitioners can use to support the development of specific psychological skills and characteristics, for example, the Psychological Characteristics for Developing Excellence (PCDE, A. MacNamara et al., 2010; Á. MacNamara et al., 2010). Such implicit developmental strategies to develop knowledge *through* sport experiences have been seen in community/school sport settings in the development of social skills (Holt et al., 2009) and working with others (Holt et al., 2008) and now in talent and performance settings. Further, the specific use of challenge has been advocated elsewhere in the talent development literature, for example, Collins and MacNamara (2012) supported the use of challenge in talent development settings and such challenge should be specifically planned in. Recently, the role of the coach and the notion of "tough love" have been advocated in a sample of rugby players who cited such harder, as well as softer interpersonal skills, of the coach supported them in navigating their talent pathways (Taylor et al., 2022b). Moreover, supporting players to learn from challenge through reflection has also been advocated over simply providing challenging experiences (Taylor et al., 2022a). Holistic development has also been advocated extensively in the talent development literature as being an important facet of a high-quality environment and efforts to facilitate such development are recommended (Li et al., 2015; Martindale et al., 2010; Rongen et al., 2018).

Practitioners also spoke of offering support in a variety of ways within their environments, one example was prioritizing effective coach–athlete relationships to help optimize the opportunity for informal discussions and being there for support when needed. The positive impact of the coach–athlete relationship has been seen to be supportive of positive athlete experience in sport (Jowett, 2017); in the present study, this was centred around understanding the athlete and their views for coaches to offer the best possible service. The importance of

offering social support has been seen in soccer talent development settings and had been associated with higher wellbeing and less stress (Ivarsson et al., 2015).

Regarding reviewing the efforts of practitioners in optimizing the environment, this section produced the least detailed insight from participants. This is of little surprise given the complexities of environments (Mitchell et al., 2021). Practitioners utilized more subjective approaches such as observation to get a feel for variables such as *enjoyment* when in training. A rolling review with appropriate staff to regularly and quickly notice any concerns with the environment was cited by a number of practitioners in the present study (Burns & Collins, 2023). Review mechanisms have clear practical benefits in fast moving and dynamic settings such as talent development and performance environments and have been seen elsewhere in the literature. For example, Hall et al. (2019) used the TDEQ to evaluate athlete perceptions of key environmental processes of the Hong Kong Elite Rugby Programme, from this they developed and implemented interventions and subsequently reviewed progress on these key processes, again using the TDEQ. In a football context, Mitchell et al. (2024) used a mixture of self-report and validated scales to assess the impact of a psychosocial development programme to assess its efficacy. Programmes themselves could be reviewed through the use of programme logic modelling to visually depict the function of a programme to allow for further interrogation (W. K. Kellogg Foundation, 2004). More recently, immersive approaches such as Henriksen's et al. (2010a) Athlete Talent Development Environment (ATDE) and Environment Success Factors (ESF) models have been used to help describe and evaluate TDEs in a range of sports to include football (Larsen et al., 2020) and golf (Henriksen et al., 2013). Overall, reviewing the environment appears to be something of a weak spot in the planning-doing-reviewing process associated with the sporting environment.

Strength and limitations

The findings from this study present the views and practices of a range of practitioners on the planning, doing and reviewing the environment in sports settings offering a unique and novel insight. Pleasingly, many of the practices align to notions of effective talent development as outlined in the literature (see, e.g., Martindale et al., 2005). However, this study is not without limitation. One limitation of this study is that we obtained somewhat retrospective accounts of practice from practitioners, and we would advocate their future use of methods that require more in situ observation and accounts of practice associated with the development of the environment to offer a "live" picture. We have also obtained a range of perspectives from sport practitioners operating at different levels, in different contexts and age categories which might capture the idiosyncrasies associated with specific ages and stages. We would recommend future studies focus on larger samples of managers or coaches to gain their nuanced perspectives.

Implications for practice

The study has several applied implications for those tasked with planning, delivering and reviewing the environmental features of sporting environments. Firstly, the environmental and cultural characteristics of sport settings should be clearly planned in advance and have clear objectives that can be reviewed against in order to provide the best possible service to participants. Such planning will assist sports practitioners in being proactive in having a shared view in what functions they want the environment to undertake. Secondly, it is clear that there are a range of strategies deployed by practitioners when delivering the environment and as a result this presents challenges in providing clear guidelines for what works best as this may differ from sport to sport. From the data, these might well include the careful and considered use of challenge through coach interactions as well as supporting learning from through challenge. Further, understanding the participants needs and planning implicit approaches to psychosocial development appear vital to the talent development process. Finally, it is recommended that sports organisations should design and refine clear review process with a range of stakeholders to include athletes, staff and parents to help sports practitioners create views around whether or not the environment is delivering on planned intentions.

The study and its findings present further avenues for research in this area. Firstly, it would be advantageous for researchers and practitioners to have a clearer understanding planning and review processes in order to ensure environment is serving its intended functions. Particularly, it would be useful to have a deeper understanding across more sports of planning and review processes especially with regard to the environment. This may come in the form on coach education of existing review approaches such as the Talent Development Environment Questionnaire-5 (Li et al., 2015), Athlete Talent Development Environment (ATDE)/Environment Success Factors (ESF, Henriksen, 2010). Secondly, it would be useful to obtain a deeper understanding of sport specific practices in delivering the environment. More specifically, understanding what works best in which contexts. This deeper understanding may be obtained via observation of practice and the production of case studies.

Conclusions

This study presents one of the largest and wide-ranging inquiries into how sports practitioners from a range of sport types plan, do (deliver) and review their environment for the participants they serve. A range of novel and unique findings have been reported to include the importance of planning the environmental characteristics and having intended objectives for the environment. Such planning will help focus time and effort into what can be done with resources available. With regard to approaches to foster effective environments, further research needs to be undertaken to understand what strategies work best in context. Finally, there is a need to

further refine or even develop approaches to measuring and/or reviewing the impact of planning and efforts to foster the environment to obtain a nuanced understanding of what works best.

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