

Evaluating the state of player development in Major League Soccer during the youth- to-senior transition process

A thesis submitted in partial fulfilment of the requirements of Liverpool John
Moore's University for the degree of Professional Doctorate

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April 2025

Abstract

A pivotal moment in a soccer player's career is the transition from the youth academy (YA) to the first team (FT), a period marked by uncertainty, greater psychological and physiological demands, and both an evolving status and identity within the hierarchy of a professional club. While player development systems, such as YA programmes, in professional soccer have become more sophisticated, the youth-to-senior transition still poses major challenges for club stakeholders charged with successfully progressing talented young players into FT soccer. Traditionally explored by sport psychology scholars through qualitative research methodologies and within British and European contexts, this within-career transition is now receiving growing attention and interest globally from various club stakeholders, such as coaches and applied sport science practitioners, aiming to understand the physical and organisational demands associated with the transition process into professional FT environments. In North America, Major League Soccer (MLS) has experienced rapid expansion, significant investment in homegrown player development initiatives, the installation of professional reserve teams (RT), and the establishment of a third-tier developmental league, MLS Next Pro (MLSNP). These strategic efforts have aimed to foster a more cohesive 'professional player pathway' (PPP), yet the structural evolution of MLS has created a complex player development system. Therefore, the aim of this thesis was to assess the state of player development in MLS during the youth-to-senior transition process

The aim of the first study (**Chapter 4**) was to survey MLS stakeholders' attitudes and perspectives on the youth-to-senior transition, gathering insights on [1] the organisational aims and structure within MLS clubs, [2] the capabilities of club entities (i.e., RT and YA) to prepare players for the FT, and [3] the overall transition process within MLS. A total of 80 participants working in various 'player operation' roles for MLS clubs voluntarily completed an online survey. The results demonstrate that MLS has joined the global game by adopting a club

structure model, involving YAs and RTs that aim to develop young professionals for the FT. The key decision-makers determining players' upward mobility within MLS organisations are technical staff and club executives. Though, while players are transitioning into the professional FT, communication may or may not always be clear and effective, and psychological support may be absent, which may impair player development initiatives set by individual clubs and MLS more broadly.

The aim of the second study (**Chapter 5**) was to explore MLS homegrown players' within-career transition experiences to understand the state of player development during the transition process to FT soccer. An explanatory sequential mixed methods design was employed, beginning with a quantitative analysis of match data from 397 professional and youth international games, followed by semi-structured interviews with 10 youth international players (mean age = 18.3; $\pm$ 0.48 y), who were under contract with MLS clubs. A deductive-inductive thematic analysis revealed five main themes: strategic club operations, gaining competitive experience, competition program standards, supplemental federation support, and environmental change outcomes. The results from this study illustrate the complexities of within-career transitions, emphasizing defined talent pathways, adaptability, and support mechanisms in player progression, providing valuable insights into the development of talented young professionals within MLS and the North American soccer ecosystem in general.

Through the lens of Complex Adaptive Systems (CAS), the third and final study (**Chapter 6**) aimed to [1] quantify the seasonal physical loading of an MLS homegrown player (age = 18 y; stature = 1.73 m; body mass = 68.7 kg; position = fullback) undergoing the youth-to-senior transition and [2] explore MLS sport scientists' perspectives on the working dynamics and practices employed within their club to support player development during the youth-to-senior transition. A mixed methods single case study design was adopted, combining both club and national federation external loading data from global positioning systems (GPS) with semi-

structured interviews conducted with sport science practitioners from the player's MLS organisation. Descriptive statistics were used to analyse the quantitative GPS data, while hierarchical content analysis was employed to create meaningful categories from the qualitative interview data. This study's findings underscore the need for a holistic, system-wide approach to the youth-to-senior transition in MLS, revealing how transitioning between club and national team (NT) settings creates complex developmental demands, variable physical loading, and organisational challenges that require adaptive, collaborative strategies to support homegrown player progression.

In summary, the findings from this thesis demonstrate that player development during the youth-to-senior transition is a unique, non-linear process in MLS. Further, it is shaped by the interdependence of club practitioners, different training environments, and the organizational structures established over recent decades. Accordingly, several avenues for future research are warranted, such as comparative mixed methods designs and longitudinal studies that track transitioning players across multiple seasons. Improving transition experiences and outcomes in MLS clubs will continue to rely on more strategic multidisciplinary coordination, staff alignment, and appropriate levels of responsiveness to young, developing players' needs.

Acknowledgement

First off, a heartfelt thanks goes to all three of my academic supervisors, Dr Simon Roberts, Dr Kevin Enright, and Dr Martin Littlewood.

Simon: Thank you for guiding me through the Professional Doctorate programme. I am very grateful for our friendship and look forward to many more Zoom and/or Microsoft Teams calls in the future, first discussing the social and political issues of the day before moving onto the business of academic writing.

Kevin: Thank you for all your critical feedback on my written work and helping me navigate the peer-review publication process. I also really appreciate the necessity of grabbing a pint or two together when visiting Liverpool.

Martin: Thank you for your support and genuine positivity throughout my time while completing the Professional Doctorate programme. Come visit Chicago!

Next, I would like to give thanks to two key individuals, John Hackworth and Rick Cost, who have supported me significantly in my professional development at US Soccer.

Hack: Thank you for reading my work on the MLS talent pathway and taking my phone calls to help clarify different roster regulations and explain how things operate in MLS. Thank you for giving one of the most inspiring welcome meeting speeches on my very first day at US Soccer back in December 2014. It still inspires me today.

Rick: Thank you for “living the dream” every day during your time at US Soccer, challenging, mentoring, and supporting me in my career pathway in “top sport.”

Finally, to my family, who have patiently supported me personally (and sometimes financially) over these many long years. My academic career as a student is finally coming to an end. Thank goodness.

Aggie and Dan: Thank you Mum and DGMannix for your unwavering support. Three countries. Seven US states. One US capital (“No taxation without representation”). Six schools and two universities. I am here now because of you both.

Mary Kate, John, Meg, Jack L., Jack A., Henry, and Charlie: thank you all for your support during this long old slog. I appreciate *most* of you listening intently for the last ~4.5 y all about my “fun doctorate.” Now it’s your turn, Meg!

Sarah: Well, well, well, save the best for last. Thank goodness you and I took that stroll down Wabansia Avenue back in May 2020. Thank you for pissing me off that day and pushing me to think long-term, even in the midst of a global pandemic. You have certainly become my greatest motivator, asset, and companion. All I can say is thank you (again), I love you, and I cannot wait to marry you.

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List of Symbols and Abbreviations

Equals	=
Percentage	%
Athlete Management Systems	AMS
Celsius	°C
Complex Adaptive System	CAS
Club-to-International Transition	CIT
Confederation of North, Central American, and Caribbean Association Football	CONCACAF
Coronavirus	Covid-19
Coefficient of variation	CV
District of Columbia	DC
Designated Player	DP
Domestic Training Camp	DTC
Professional Doctorate in Applied Sport and Exercise	DSportExSci
First Team	FT
General Allocation Money	GAM
Global Positioning System	GPS
Loan Transition	LT
International Association de Football Federation	FIFA
Hours	h
Hierarchical Content Analysis	HCA
High Performance	HP
Kilometres	km
Kilometres per hour	km/h
Liverpool John Moores University	LJMU
Mean	<i>M</i>
Meters	m
Match Day	MD
Mixed Methods Appraisal Tool	MMAT
Mixed Methods Systematic Review	MMSR

Multidisciplinary Team	MDT
Minutes	min
Major League Soccer	MLS
MLS Next Pro	MLSNP
Sample size	n
National Governing Body	NGB
National Team	NT
Preferred Reporting Items for Systematic Reviews and Meta-Analyses	PRISMA
Professional Doctorate	PD
Professional Player Pathway	PPP
Reserve Team	RT
Under	U-
United Kingdom	UK
United States	US
United Soccer League	USL
United States Soccer Development Academy	USSDA
United States Soccer Federation	USSF
Strength and Conditioning	S&C
Standard Deviation	<i>SD</i>
Talent Identification and Development	TID
Target Allocation Money	TAM
Universal Time Coordinated	UTC
Washington	WA
Week	wk
Year	y
Youth Academy	YA
Young Designated Player	YDP
Youth International Tournament	YIT

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Chapter 1

General Introduction

1.1 Introduction

The purpose of a traditional Doctor of Philosophy is to train an individual for a career in research or academia (Bourner et al., 2001). In contrast, a Professional Doctorate (PD) is designed to cater to individuals who are employed in a profession and are intent on carrying out applied research to create new knowledge and practical guidance that can lead to changes in professional practice (Jones, 2018). To achieve this outcome, the research undertaken by a doctoral student should contribute to the development of their professional and research skills. Therefore, this general introduction will address both the research and professional aims and objectives of this doctoral thesis in subsequent sections.

1.2 Research background

1.2.1 Origins of career transition research

Career transitions are defined as a turning phase in the development of one's career, which brings about a set of demands beyond those experienced in everyday life, requiring coping processes that can either lead to successful or less successful outcomes along with relevant changes in an individual's career trajectory (Samuel and Tenenbaum, 2011, Stambulova and Wylleman, 2014). Research on career transitions in youth, elite, and professional sport was pioneered by the field of sport psychology and for over the past fifty years has witnessed an incredible expansion of international academic discourse (Stambulova et al., 2021). Originally, scholars were rooted in studying career termination, or retirement from sport, employing non-sport oriented frameworks but later evolved, embracing a more holistic, developmental perspective by examining other phases and events occurring across a sport career (Wylleman et al., 2004). By adopting this life-span approach, studying a whole career from beginning to end, greater recognition subsequently centred on within-career transitions in sport and led to the design of sport-specific models (e.g., Stambulova et al., 2017), which

consider not only athletic and non-athletic development, but also the relevant environments and cultural contexts, informing both tailored practice and further career research in particular sport domains (Stambulova et al., 2021). In the global sport of soccer, one career transition in particular, known as the youth-to-senior transition, has garnered an abundant level of interest more recently from researchers and practitioners alike.

1.2.2 The youth-to-senior transition in professional soccer

The youth-to-senior transition, which can last anywhere between one to four years in duration (Finn and McKenna, 2010), is perhaps one of the most defining periods in a player's playing career (Morris et al., 2017). To help illustrate this multifaceted, complex, and dynamic process within professional soccer (Kent et al., 2023), various types of models have been developed by scholars and applied researchers (Littlewood et al., 2019, Richardson et al., 2012, Swainston et al., 2022). The first model (Figure 1.1), adapted from Wylleman et al. (2003), is noteworthy because its authors insightfully identified a critical phase in a player's development that affects their future career progression (Richardson et al., 2012). In the context of a professional club's organisational structure, this critical phase of development, referred to as the 'developing mastery' phase mainly occurs in the RT setting, which serves as a bridge between the YA and FT (Dowling et al., 2018). Given that many of the players in the RT may not be fully prepared for the FT and still require focused developmental support, such as bespoke intensive training, regular match play opportunities, and expert coaching provision. The adapted model is also significant because it outlines different levels and stages of player development across the three different organisational entities of a professional soccer club. For example, at a socio-cultural level, the model demonstrates the contrasting natures of the YA and FT environments. The former is characterized as a nurturing and caring environment focused on development, while the latter in contrast is associated with being hyper-masculine,

ruthless, and results oriented due to the economics of modern professional soccer (Nesti and Littlewood, 2011).

<i>Athletic level</i>	<i>Academy (16-19s) Development</i>	<i>Post-Academy Developing Mastery</i>	<i>First team Mastery</i>
Psychological level	Adolescence	Social insecurity & comparison	(young) Adulthood Limelight stardom
Psycho-social level	Peers, parents, coach, sports psych, Ed & welfare	Partner New coach(es) Family	Manager New coach(es)
Environmental and cultural level	Process oriented Nurturing Caring Empathic	Uncompetitive Lonely Isolated Uncertain Stagnant	Outcome oriented Ruthless Masculine macho Heightened competition Team
Nature of support	Highly supportive	Bereft of social support	(Typically) crisis management, sophist

Figure 1.1. The sociocultural model of player development in professional soccer at academy, post-academy, and first team levels (Richardson et al., 2013).

The next model focuses on a range of psychosocial challenges facing transitioning players as they progress upwards through the organisational structure of a professional club (Figure 1.2). To help illustrate the different internal and external challenges facing a young professional, a schematic model that encapsulates their lived experiences was developed (Littlewood et al., 2019). This model, which aims to understand career progression within the organisational structure of professional clubs in the United Kingdom (UK), highlights both a player's changing occupational status and identity, as well as the philosophical and cultural aspects of the FT environment. Thus, the terms seen in Figure 1.2, such as 'Scholar,' 'Apprentice' and 'Pro' are employed in British clubs to designate the status and position of players. While these players are undergoing the transition process and gaining promotion in their organisational status, they can still experience a host of stressors related to organisational issues such as communication problems with coaches, time management concerns, poor scheduling practices, political infighting between sporting departments (e.g., sports medicine versus sports science), and undefined daily procedures (Littlewood et al., 2019). These types

of stressors can then overwhelm young players during what is already a very demanding and tumultuous period in their careers.

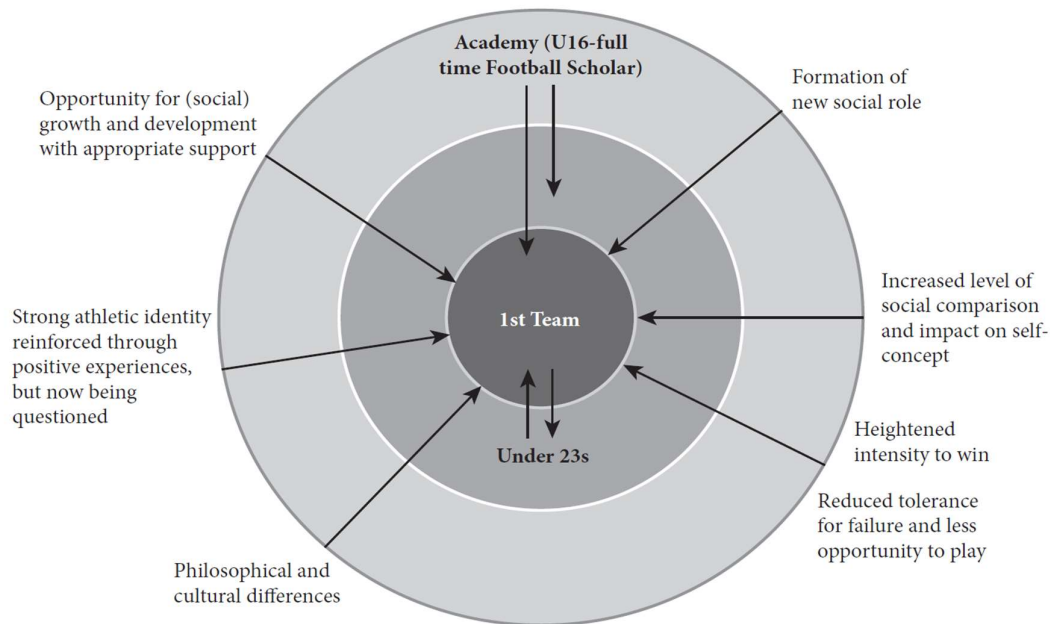


Figure 1.2. Challenges to player identity during the transition from academy to first team environments in a professional soccer club (Littlewood et al., 2019).

Finally, an empirical model (Stambulova et al., 2017), which outlines the temporal structure (i.e., preparation, orientation, adaptation, and stabilization phases) was adapted by researchers in the UK to fit a soccer-specific context (Swainston et al., 2022). The adapted model pinpoints key checkpoints that may occur during the different phases of the transition from the YA programme to the FT setting (Figure 1.3). The first checkpoint for a young player is signing their first professional contract followed by a full-time move to the FT training environment. The third checkpoint entails earning a spot in the match day roster and the final checkpoint is when said player establishes themselves as a regular in the starting eleven. What is unique though in this adapted model is the presence of a ‘grey period’ which is defined as a period without a clear short-term goal (Swainston et al., 2022). This ‘grey period’ can occur when young players perceive an absence of any long-term development goals, coupled with the belief that they are not optimizing their short-term performance goals due to insufficient

playing opportunities in the FT over a 6-to-12-month period. This can subsequently impair their abilities to maintain motivation and confidence during the transition (Swainston et al., 2022).

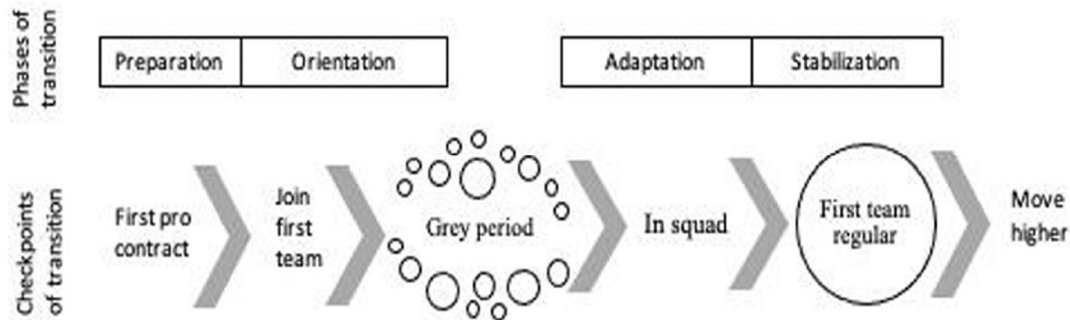


Figure 1.3. Phases of the youth-to-senior transition mapped against major checkpoints based on transitioning players' experiences (Swainston et al., 2022).

1.2.3 Expanding the scope of career transition research in professional soccer

All three models summarised in the previous subsection provide students, academic researchers, and applied practitioners a general understanding of the youth-to-senior transition process in professional soccer. Designed by scholars in sports psychology and sociology, these figures have outlined key insights concerning chronological, sociocultural, and psychosocial factors related to the transition process within professional soccer clubs. However, all three models have been designed from strictly British soccer contexts.

Exploring the various talent development pathways across elite global soccer is critical to advancing knowledge on career transitions and enhancing both applied researchers and practitioners' understanding of working practices within different soccer ecosystems. At present, much of the academic research has originated from the UK due to the sport's deep cultural and societal significance (Morrow, 2011), as well as the longstanding presence of the sport and exercise sciences within the country's university and high performance (HP) sport systems (BASES, 2024).

In contrast, soccer has experienced significant growth in the United States (US) since the turn of the millennium (Gerke, 2019). However, the integration of the sport and exercise sciences within US universities has not been a firmly established academic discipline like it is in the UK (Stone et al., 2004). Further, as a result, research on career transitions in North American soccer remains limited, particularly in the top-tier domestic league, MLS. Given the league's unique structure and approach to long-term player development, which will be examined in the subsequent chapter, there is a need for further academic inquiry. Expanding research in this area will provide valuable insights into how MLS clubs are supporting young players through the transition to professional soccer, contributing to the broader understanding of within-career transitions in global soccer.

1.3 Research aims and objectives

The overall research aim of this thesis is to assess the state of player development in MLS during the youth-to-senior transition process. The objectives of the thesis are as follows:

1. To provide a comprehensive overview of MLS' talent development pathway and its evolution thus far.
2. To investigate club stakeholders' attitudes and perspectives on the youth-to-senior transition process league-wide and within their own organisations.
3. To explore MLS homegrown players' within-career transition experiences to understand the state of player development during the transition to FT soccer.
4. To quantify the seasonal physical loading of an MLS homegrown player undergoing the youth-to-senior transition process.
5. To explore MLS sport scientists' perspectives on the dynamics of working practices within their organisation that aim to support player development during the youth-to-senior transition.

1.4 Professional background

In 2013, I completed the master's programme in Sports Physiology at Liverpool John Moores University (LJMU) and returned to the US, seeking employment opportunities in professional soccer and unsure over whether I would ever return to academia. After a period of unemployment in late 2013 followed by part-time employment as a youth soccer coach for the New York Red Bulls development programme in New Jersey and a strength and conditioning coach at a private high school in Washington, District of Columbia (DC) in 2014, respectively, I received an offer to join the US Soccer Federation (USSF) as a network professional fitness coach for the men's youth national teams programme. From December 2014 to December 2015, I had the opportunity to work on a part-time basis with the Under 14 (U-14), U-15, and U-17 age categories. In this role, I attended various domestic training camps and youth international tournaments and even made a return visit to LJMU in August 2015. I can recall during my first visit back to the campus sensing a real internal buzz to consider further academic pursuits.

During this period, I also secured further employment opportunities as an independent contractor with DC United's YA, working primarily as a performance coach for the U-16 and U-18 age categories. At the time, DC United had an affiliate agreement with the Richmond Kickers based in Richmond, Virginia, located ~155 km south of the nation's capital. While in the academy setting, I worked with an MLS homegrown and US youth international player who trained full-time with the FT in the morning and sporadically with the YA in the evening before traveling down to Richmond for third division domestic league matches with the Kickers in the United Soccer League (USL). I had concerns regarding the demands facing this homegrown player and brought them to the attention of the FT's head of performance, but he dismissed them as simply the reality facing young professionals. It perturbed me that as a professional club, we were not attempting to optimize the young player's training microcycle

and failing to work collaboratively and strategically with other sporting departments (i.e., technical, medical, administration, etc.) to address his long-term development. A few months later, I left DC United for a full-time role in the Western Conference of MLS.

In January 2016, I drove halfway across the country to Kansas City, Missouri, to begin a new role with Sporting Kansas City as a sport scientist for the club's FT. That year was the inaugural season of the club's professional reserve team (RT), Swope Park Rangers, and the first time the club would be operating three entities (i.e., FT, RT, and YA) simultaneously. The limited staffing resources meant I was delivering sport science provision across these three entities. After one season, however, my position was eliminated, but I was fortunate to land another opportunity with Houston Dynamo Football Club (FC) the following year. Working as the club's RT performance coach, I was based in Edinburg, Texas, located ~473 km south of Houston near the US-Mexico border. In this role, I worked with Dynamo players who competed in the USL, which had just earned preliminary status from the USSF as a second division league. On various occasions, FT players who were regularly not getting match play opportunities in MLS would take the 1 h 10 min flight from Houston to McAllen and arrive just in time for the final training session. They would spend the night in a hotel, play the USL match, spend one more night, and then take the first morning flight out back to Houston. The geographical size of Texas and the US in general can often present logistical challenges that impact the management of players physical preparation and recovery.

At the conclusion of the 2017 USL season, I was offered a full-time position in Chicago, Illinois with the USSF's newly formed HP Department, working with multiple men's youth national teams (NTs) that compete in major youth events hosted by the Confederation of North, Central American, and Caribbean Association Football (CONCACAF) and the International Association de Football Federation (FIFA). Over a biennial cycle, which culminated in traveling to Brazil for the 2019 FIFA U-17 World Cup, I worked with a large pool of

professional and amateur players who shared with me their experiences in navigating the youth-to-senior transition process back at their clubs. During my first two years working full-time at the USSF, I also had two more opportunities to visit LJMU, which further spurred my interest to return to academia to complete a doctoral degree.

After several months of reflection on my career during the coronavirus (Covid-19) pandemic, I decided it was time to apply to the Professional Doctorate of Applied Sport and Exercise Science (DSportExSci) programme at LJMU in autumn 2020. Thus, in contrast to my previously held belief back in 2013, I returned to academia in January 2021, commencing the first module shortly before departing for Guadalajara, Mexico for the 2021 CONCACAF Men's Olympic Qualifying Championship. At this qualifiers event, I served in a secondary role, delivering both strength and conditioning and nutritional support. Unfortunately, the team failed to qualify for the Tokyo Olympic Games, losing to Honduras in the semi-final.

The following year, I was promoted to Senior Sport Scientist and began working primarily with the U-20 and U-19 age categories. I also became an accredited sport and exercise scientist through the British Association of Sport and Exercise Sciences (BASES) shortly before beginning in the new role. A year later, I joined the Sport and Performance Division Committee at BASES as a postgraduate student representative and have organized several online webinars and helped recruit keynote speakers and other presenters for Division Day events. In Spring 2022, CONCACAF merged the U-20 Championship into a youth world cup and Olympic qualifiers event, primarily due to the financial constraints brought about by Covid-19. In this tournament, the U-20s successfully qualified for both the FIFA U-20 World Cup and the Paris Olympic Games, beating Costa Rica and Honduras, respectively, in San Pedro Sula, Honduras. Subsequently, I travelled to Argentina in May 2023 for the FIFA U-20 World Cup as the sport science lead, and in July 2024, I travelled to France for the Paris Olympic Games as the Head of Performance for the US Olympic Men's Soccer Team (i.e., U-

23s). When I returned to the US a few weeks later, I interviewed for the Sports Science Senior Manager role, and in January 2025, I was promoted to the position. In this new role, I oversee the sports science provision for both the Extended (i.e., grass, court, and sand) and Youth NT programmes, which encompasses 25 NTs in total. In the following month, my line manager, the Head of HP, departed the USSF for an opportunity back in Europe, leaving me to spearhead various initiatives in preparation for the USSF's relocation to Atlanta, Georgia, where a new National Training Centre is currently being constructed.

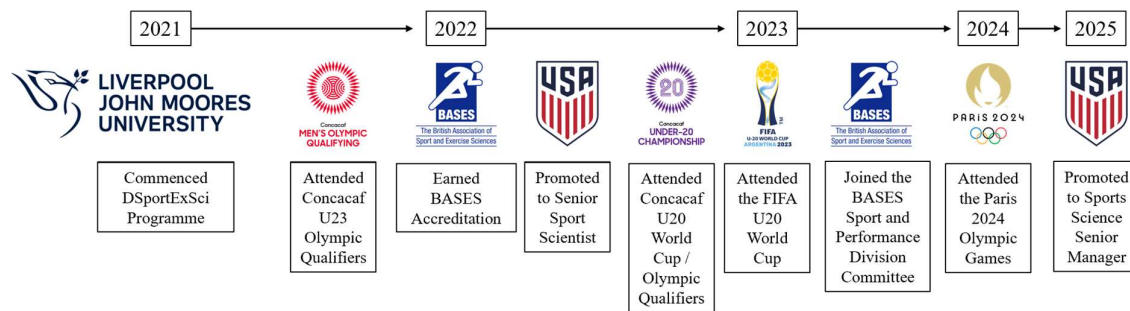


Figure 1.4. A timeline of events from 2021-2025, concerning the doctoral candidate's professional background since beginning the DSportExSci programme at LJMU.

1.5 Professional aims and objectives

To successfully complete the first module of the DSportExSci programme, a research proposal and training plan were submitted, which included a comprehensive self-audit. In the training plan, a commentary on reflective practice was provided and two self-evaluation tools were selected to help identify pertinent research and professional skills needing improvement over the duration of the DSportExSci programme. The tools selected for the self-audit were the CliftonStrengths online assessment and the Vitae Research Development Framework. Further details concerning the self-audit can be found in the **Chapter 9**. The completion of the self-audit highlighted the following key focus areas for improvement:

- Subject knowledge and application of research methods
- Practicing prioritization of tasks and time management
- Implementing a research strategy and project planning

- Leadership, supervision, and mentoring
- Communication and dissemination through media, publications, and other mediums

In **Chapter 7**, an overview and meta-reflection is provided, addressing the development of these focus areas listed above.

Chapter 2

The Evolution of the Talent Development Pathway in Major League Soccer

*The following chapter has been published in Soccer & Society
(<https://doi.org/10.1080/14660970.2024.2400390>)

2.1 Overview

While much of the academic literature on youth-to-senior transitions in professional soccer has focused on European systems, particularly those in the UK (e.g., the Elite Player Performance Plan), relatively little is known about how these transitions are structured and supported within North American soccer ecosystems. Given the significant structural and cultural differences between MLS and its European counterparts (i.e., close pyramidal system, franchise ownership models, and divergent talent development pathways) this chapter provides a necessary contextual foundation for understanding the research that follows. The majority of content found in this chapter was published online by Taylor and Francis as a commentary article in the peer-reviewed journal, *Soccer & Society*, on 23 September 2024 and is available to readers using the following link: <https://doi.org/10.1080/14660970.2024.2400390>.

2.2 Introduction

A recent book chapter showcasing ‘International Perspectives’ on male talent pathways in youth soccer presented contextual information about the current state of talent identification and development (TID) in the US and Canada (Kelly et al., 2023). The evaluation presented by Kelly and colleagues (2023) is timely given the reemerging interest in North American soccer following the recent high-profile move by Lionel Messi to MLS club, Inter Miami CF, along with the announcements that the 2024 Copa America and 2025 FIFA Club World Cup will be hosted in the US, followed by the 2026 FIFA World Cup, which will be co-hosted in the US, Mexico and Canada. So, while these contributions are to be welcomed, the principal investigator felt a more detailed and nuanced perspective on the US soccer landscape could be provided, particularly concerning the evolving talent development pathway in MLS. To be clear, this is by no means a criticism of Kelly and colleagues. On the contrary, while Kelly and colleagues (2023) offer a valuable overview of TID initiatives in North America, the constraints of their format limited the depth of their analysis. This chapter extends their contribution by

providing a more comprehensive, context-rich analysis grounded in both professional practice and scholarly literature. The chapter that follows is provided by an active research practitioner involved in talent development in the US soccer landscape, working in the HP Department at the USSF (Mannix et al., 2024). For brevity, this chapter is primarily focused on MLS' presence in the US and is divided into sections concerning the historical backdrop of MLS, the growing organisational structure of its clubs, pertinent roster and financial regulations regarding international and homegrown players, and the present annual calendar(s) for the MLS ecosystem. As a whole, MLS has witnessed a tremendous evolution over the course of its 29-year history, which has had major implications on the league's present talent pathway and shaped a very different TID system relative to British and European soccer, which have historically dominated the peer-reviewed literature. Therefore, this chapter aims to inform its readers on the evolution of the talent pathway within MLS over the previous two decades and, like Kelly and colleagues, attempt to address the dearth of evidence on TID practices within North American soccer.

2.3 Background on MLS

MLS is the highest-tier league in men's professional soccer in both the US and Canada. The league is sanctioned by the USSF, the national governing body (NGB) for soccer in the US and affiliation member to both FIFA and CONCACAF. MLS was formed in 1993 in the run-up to the 1994 FIFA World Cup after the USSF won the bidding process to host the tournament in 1988 and agreed in principle with FIFA to assist in re-establishing a new professional league in the US (Duerr, 2014, Jewell and Molina, 2005). The previous professional league, the North American Soccer League, dissolved and ceased operations at the close of 1984, and for more than a decade, the US did not have a sanctioned first division league until MLS began league play in the Spring of 1996 (Duerr, 2014, Jewell and Molina, 2005). In its inaugural season, MLS started with ten teams solely based in the US, and since

1998 the league has expanded multiple times across the US and, since 2006, Canada (Coates et al., 2016).

The institutional structure and operations of MLS are unique to both global soccer and professional sport in the US (Brownlee and Lorgnier, 2017, Jewell, 2017). Unlike other major US professional sports leagues, MLS operates under a single-entity business model in which a group of investors, or franchise owners, collectively own all MLS teams jointly, along with the league's other assets, but each investor is aligned to a single club and granted a license to operate their team in a select city, or "market" (Bradbury, 2021, Brownlee and Lorgnier, 2017, Warren and Agyemang, 2018). Consequently, the league controls the ownership of all teams, sponsorships, broadcasting rights, as well as player contracts and salaries, which means player transfers into MLS or between its clubs is largely determined by the league (Jewell, 2014). Additionally, professional soccer in the US (and Canada) is a closed pyramidal system, meaning there is no promotion or relegation system (Warren and Agyemang, 2018). Hence, MLS sits atop the pyramid as a closed league and the only means of entry is when a new franchise owner pays the league's expansion fee (Davis, 2015).

Although each franchise owner holds significant management control over their respective club, it has been argued that the league structure results in a monopolized market for professional soccer in the US (Kessenne, 2015). However, MLS believes its singly-entity structure, strategic market expansion, and strict player acquisition and roster management regulations are all critical to its sustainability and long-term success (Coates et al., 2016, Francis and Zheng, 2010, Jewell, 2014). Despite contracting in 2001, losing two Florida-based clubs in Miami and Tampa (see Figure 2.1), league expansion kickstarted again shortly thereafter in 2005 (Coates et al., 2016, Duerr, 2014). Today, MLS is made up of 30 clubs, including 27 based in the US and three in Canada, but plans for more expansion expect the league to eventually reach 32 clubs (Stejskal and Tenorio, 2021). This accelerated league

expansion has ultimately created greater opportunities for homegrown domestic talents in North America, particularly in the US.

2.4 Growing club infrastructures

For decades, professional clubs, particularly in Western and Northern Europe, have been making significant investments into their organisational structures to provide a comprehensive pathway that aims to progress talented young players into the FT or generate financial income by selling these talents in the transfer market (Relvas et al., 2010). MLS adopted this globalizing youth development model established by leading European clubs when it launched its YA and homegrown player initiatives in 2007 and 2008, respectively (Bowers and Green, 2016, Smolianov et al., 2015). Despite receiving strategic recommendations to cut spending in youth development almost a decade later after enacting these initiatives (Tenorio and Maurer, 2019), MLS has continued to finance its talent pathway, referred to as the PPP, conceivably to keep up with the ever-increasing globalization, professionalism, and investment in elite global soccer. Consequently, for the better part of the last two decades, MLS clubs have steadily expanded their organisational structures, assembling youth academies and reserve teams, that model after European clubs to help streamline the player pathway into their FTs. This has subsequently been a crucial factor that has changed the role of the college draft system within MLS, whereby many clubs now heavily rely more on developing players within their YA system given the significant investments made into TID initiatives since 2007 and more recently (Boehm, 2023). Amidst the Covid-19, MLS spearheaded the launch of its own youth league and third-tier domestic league for its club's YAs and RTs, respectively. As a result, the MLS ecosystem now encompasses a more definitive talent pathway for developing potential homegrown talents. Tables 2.1 and 2.2 provide an overview of the sporting infrastructure and present talent pathway, respectively, for each MLS club.

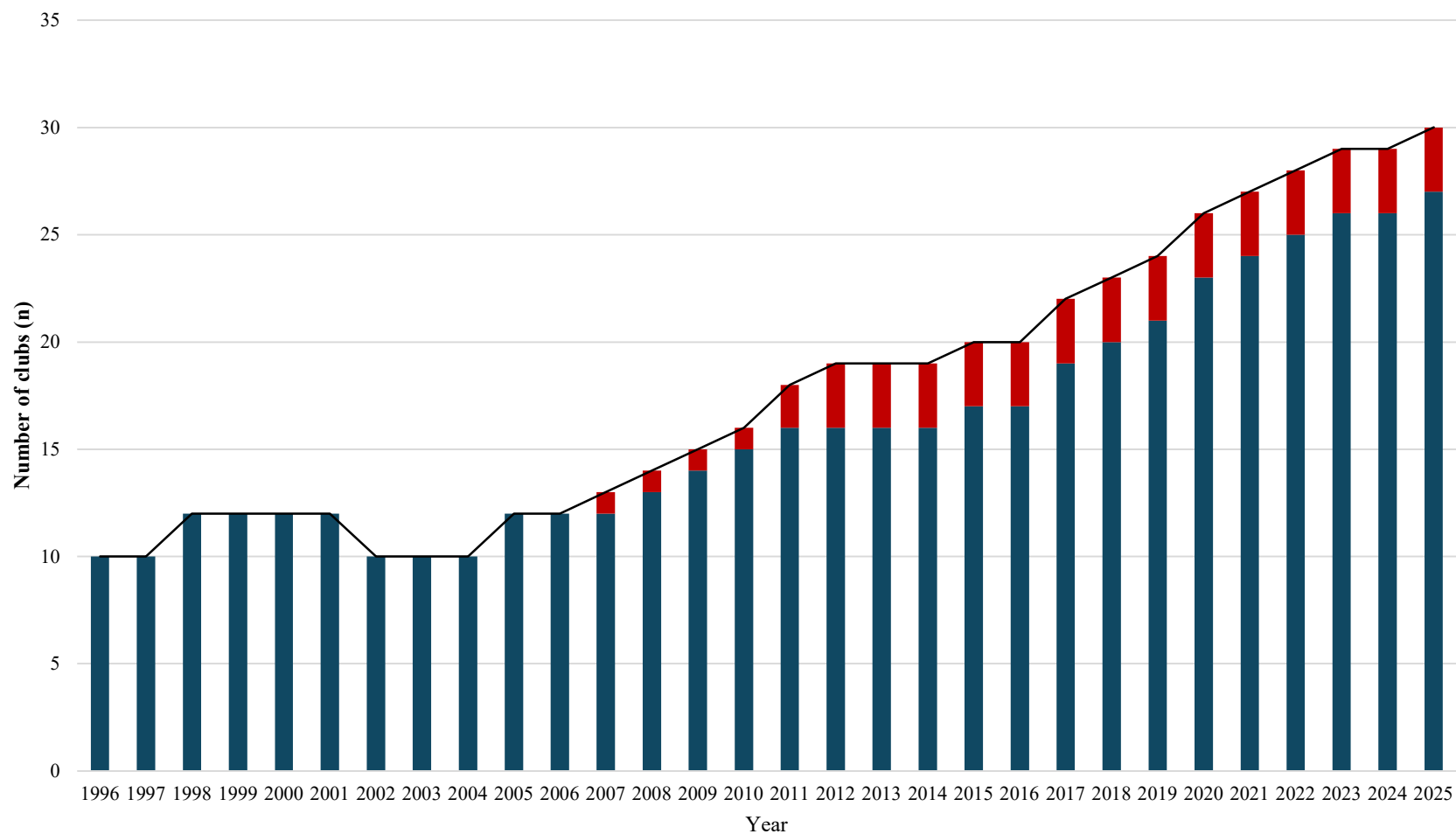


Figure 2.1. The growing number of clubs in MLS following league expansion over the course of 30 seasons.

Notes. Blue bars denote US-based clubs and red bars denote Canadian-based clubs. In 2025, San Diego FC joined MLS, increasing the total number of clubs to 30.

Table 2.1. The geographical conference structure in MLS and each club's sporting infrastructures in the North American domestic league.

Conference	Club	Location	Joined	Soccer-specific stadium	Capacity	Opened	Training facility
Eastern	Atlanta United FC	Atlanta, GA	2017				Children's Healthcare of Atlanta Training Ground
	Charlotte FC	Charlotte, NC	2022				Atrium Health Performance Park
	Chicago Fire FC	Chicago, IL	1998				Endeavor Health Performance Center
	FC Cincinnati	Cincinnati, OH	2019	TQL Stadium	26,000		Mercy Health Training Center
	Columbus Crew	Columbus, OH	1996	Lower.com Field	20,000		OhioHealth Performance Center
	D.C. United	Washington, DC	1996	Audi Field	20,000		Inova Performance Complex
	Inter Miami CF	Fort Lauderdale, FL	2020	DRV PNK Stadium	18,000		Florida Blue Training Center
	CF Montréal	Montreal, QC	2012	Saputo Stadium	19,619		Centre Nutri Lait
	Nashville SC	Nashville, TN	2020	GEODIS Park	30,000		Century Farms Training Complex
	New England Revolution	Foxborough, MA	1996				Revolution Training Center
	New York City FC	New York, NY	2015				Etihad City Football Academy
	New York Red Bulls	Harrison, NJ	1996	Red Bull Arena	25,000		Red Bulls Training Ground
	Orlando City SC	Orlando, FL	2015	Exploria Stadium	25,500		Orlando Health Training Ground
	Philadelphia Union	Chester, PA	2010	Subaru Park	18,500		Power Training Complex
	Toronto FC	Toronto, ON	2007	BMO Field	28,351		BMO Training Ground
Western	Austin FC	Austin, TX	2021	Q2 Stadium	20,500	2021	St. David's Performance Center
	Colorado Rapids	Commerce City, CO	1996	Dick's Sporting Goods Park*	18,061	2007	
	FC Dallas	Frisco, TX	1996	Toyota Stadium*	20,500	2005	
	Houston Dynamo	Houston, TX	2006	BBVA Stadium	22,039	2012	Houston Sports Park
	Sporting Kansas City	Kansas City, KS	1996	Children's Mercy Park	18,467	2011	Compass Minerals National Performance Center
	LA Galaxy	Carson, CA	1996	Dignity Health Sports Park*	27,000	2003	
	Los Angeles Football Club	Los Angeles, CA	2018	Banc of California Stadium	22,000	2018	LAFC Performance Center
	Minnesota United FC	Saint Paul, MN	2017	Allianz Field	19,400	2019	The National Sports Center
	Portland Timbers	Portland, OR	2011	Providence Park	25,218	1926	Adidas Timbers Training Center
	Real Salt Lake	Sandy, UT	2005	American First Field	20,213	2008	Zions Bank Training Center
	San Diego FC	San Diego, CA	2025				Sharp HealthCare Performance Center
	San Jose Earthquakes	San Jose, CA	1996	PayPal Park*	18,000	2015	
	Seattle Sounders FC	Seattle, WA	2009				Sounders FC Center at Longacres
	St. Louis City SC	St. Louis, MO	2023	Energizer Park	22,500	2022	Washington University Orthopaedics High-Performance Center
	Vancouver Whitecaps FC	Vancouver, BC	2011				National Soccer Development Centre

Notes: * Indicates club stadiums also utilized as a training ground facility.

Table 2.2. The organisational structure within each MLS club's talent development pathway, or Professional Player Pathway.

Club	Reserve team	Youth academy age categories						
		U-19	U-17	U-16	U-15	U-14	U-13	U-12
Atlanta United FC	ATL UTD 2	X*	X	X	X	X	X	X*
Austin FC	Austin FC II		X		X	X	X	X*
Charlotte FC	Crown Legacy FC	X*	X		X	X	X	
Chicago Fire FC	Chicago Fire FC II	X	X		X	X	X	
FC Cincinnati	FC Cincinnati 2	X*	X		X	X	X	
Colorado Rapids	Colorado Rapids 2		X		X	X		
Columbus Crew	Columbus Crew 2	X*	X		X			
FC Dallas	North Texas SC	X	X	X	X	X	X	X*
D.C. United		X*	X		X	X		
Houston Dynamo FC	Houston Dynamo 2	X*	X		X	X	X	
Sporting Kansas City	Sporting KC II	X*	X		X	X		
LA Galaxy	LA Galaxy II	X*	X		X	X	X	X*
Los Angeles Football Club	Los Angeles Football Club 2	X*	X	X	X	X	X	X*
Inter Miami CF	Inter Miami CF II	X*	X	X	X	X	X	X*
Minnesota United FC	MNUFC2	X	X		X			
CF Montreal	CF Montreal U-23**		X		X			
Nashville SC	Huntsville City FC		X		X	X	X	
New England Revolution	New England Revolution II	X	X		X	X	X	
New York Red Bulls	RB2		X		X	X	X	X*
New York City FC	NYCFC II		X		X	X	X	X*
Orlando City SC	Orlando City B	X*	X		X		X	X*
Philadelphia Union	Philadelphia Union II		X	X	X	X	X	X*
Portland Timbers	Timbers2		X		X			
Real Salt Lake	Real Monarchs		X		X			
San Jose Earthquakes	Earthquakes II		X		X	X	X	
Seattle Sounders FC	Tacoma Defiance		X		X			
St. Louis City SC	St. Louis CITY 2	X*	X	X	X			
Toronto FC	TFC II	X	X		X			
Vancouver Whitecaps FC	Whitecaps FC 2		X		X			

Notes: * Indicates age categories that compete in separate youth leagues outside of MLS Next. ** Indicates CF Montreal's U-23 reserve team competes in the Ligue 1 Québec.

2.4.1 Youth academies

Professional clubs across the globe strategically utilize their YAs to provide talented players a systematic youth development programme (Ford et al., 2020), involving a combination of expert coaching, multidisciplinary support, organized training, and competitive match play (Williams et al., 2020). MLS laid the foundation for its PPP when it began its youth development initiative in 2007. The initiative mandated both Canadian and US-based MLS

clubs to begin operating youth teams to compete in the US Soccer Development Academy (USSDA), a youth domestic league that launched the previous year by the USSF. The NGB-sponsored youth league offered various age categories and featured both MLS academies and independent youth clubs. The financial impact of Covid-19, however, abruptly shuttered the USSDA in 2020 (Wilson et al., 2020), and in response MLS announced the formation of its own youth league, MLS Next, a month later (MLSSoccerStaff, 2023c). It is unknown what the annual budgetary costs are for operating an MLS academy, but at the launch of MLS NEXT, the league's press release reported MLS collectively investing over \$70 million alone in 2019 into its youth development initiative (MLSSoccerStaff, 2023c).

Like the USSDA before it, this relatively new youth league, includes both MLS youth academies and independent youth clubs, and offers competition programming across multiple age categories, from U-13 up to U-19 (see Table 2.2), with the aim of developing and preparing young players for international, professional, and collegiate soccer (Bokmeyer, 2022). The relatively new youth league also adopted several 'technical standards' previously set by the USSDA, such as compulsory weekly training frequencies for specific age categories (i.e., players registered in the U-13 age category must train a minimum of 3 times per week; players in the U-14 and older age categories must train a minimum of 4 times per week) as well as licensing requirements for both technical leadership and staff (i.e., academy directors and head coaches) (USSF, 2019, MLS, 2023). To help further elevate the coaching provision within its YA system, MLS has also been offering select academy coaches the opportunity to participate in the 'Elite Formation Coaching License' since 2013 through a partnership with the French Football Federation (MLSSoccerStaff, 2023a). Despite these advancements, there remains a dearth of evidence on the practice activities and microcycle periodization strategies employed by coaches within MLS' youth development system and future research is warranted to

examine these working practices as well as the efficacy of MLS' technical standards presently in place.

Alongside the launch of its new youth league, MLS also announced days later the beginning of a strategic partnership with US Youth Soccer (USYS), the largest youth sports organisation in the US (MLSsoccerStaff, 2020). The partnership is intended to expand the academy system's TID network across the different regions of the US and ultimately provide a means of better integrating a talent pathway between the professional and grassroots levels of the sport (Boehm, 2020). Consequently, this partnership would substantially increase each academy's talent pool size. Caution is warranted though given that the relative age effect has been previously shown to be a major factor in the selection process of male youth soccer players in the US (Vincent and Glamser, 2006). Further, while MLS provides 'player development guidelines' stipulating the regulations concerning its youth development programming initiatives, the guidelines do not provide any insight into how clubs should approach youth player selection processes nor any practical implications to help mitigate confounding factors that negatively influence how youth players are identified and developed (e.g., coaching biases, inter-individual differences in the timing and onset of biological maturation, and relative age effects) (Bennett et al., 2019). Instead, it may be left up to individual clubs to design their own bespoke strategies for player recruitment and therefore TID researchers should consider exploring working practices concerning player selections and releases within MLS to support the league's youth development initiatives.

2.4.1.1 Training compensation and solidarity payments

For academies that have installed model pathways, their status and influence can often be an integral element to clubs' strategic aims (Stratton, 2004, Nesti and Sulley, 2014), particularly due to the nature and financial impact of the transfer market in global soccer (Liu et al., 2016). Therefore, MLS announced in 2019 it would begin aligning itself more, on a fiscal

level, with the rest of the soccer world by adhering to FIFA's Regulations on the Status and Transfer of Players (Strauss, 2019). These regulations ensure professional and amateur clubs are appropriately compensated for incurred training and education costs if one of their players signs their first professional contract with a club overseas, or when a player has a transfer fee agreed between two clubs belonging to different international federations (FIFA, 2023). Historically, MLS was not inclined to assert training compensation and solidarity payments due to concerns that they violated US child labour laws or would result in litigation on anti-trust grounds from opposed stakeholders in the US soccer landscape (Carlisle, 2019). Though, as MLS and its academies matured, they began developing better youth domestic players but were frequently losing many of these talented players for no compensation to clubs abroad (Strauss, 2019, Turner and Tenorio, 2023). The players' union, the Major League Soccer Players Association (MLSPA), responded negatively to MLS' decision, as it has historically opposed the FIFA system due to concerns that the policy is "a tax," creating a disadvantage for domestic players wishing to go abroad (Carlisle, 2019, Turner and Tenorio, 2023). Nonetheless, MLS adopted these regulations perhaps to ensure its clubs remained incentivized to continue investing in youth development (Carlisle, 2019).

2.4.2 Reserve teams

RTs act as a conduit between a club's YA and FT (Dowling et al., 2018), giving players a supportive yet challenging environment where they can continue their development after graduating from the academy (Relvas et al., 2010). The evolution of MLS reserve teams, also referred to as B teams or second teams (i.e., commercially denoted as 2 or II), has been sporadic, however. An independent MLS Reserve League commenced play in 2005 with 12-14 teams competing in a single conference for four seasons before pausing for a two-year hiatus (Davis, 2010). The league eventually resumed in 2011 with 18 teams strategically grouped into three separate geographical conferences (i.e., East, Central, and West) to mitigate the financial

burden of domestic air travel. However, the MLS Reserve League failed to provide players with an adequate frequency of competitive fixtures due to its insufficient 12-match summer schedule (Rueter, 2020).

In 2013, MLS and USL (then United Soccer Leagues) agreed to a multiyear partnership that instituted interleague competition between MLS Reserve League teams and USL clubs, which were competing in USL Pro, a third division domestic league with 13 teams at the time (Doyle, 2013). As part of the agreement, MLS also initially granted its clubs the option of either maintaining their operations of a reserve team or signing an “affiliate agreement” with a USL Pro club, which enabled a loan system for select MLS rostered players. In the partnership’s first year, four MLS clubs elected to sign affiliate agreements (Freedman, 2013), and grew to ten by the following season (see Figure 2.2), resulting in the complete elimination of the MLS Reserve League at the conclusion of 2014 (Bird, 2015). The independent reserve league’s closure was also due to MLS’ evolving strategy, pushing its clubs to either “affiliate” with a USL club or field their own independent reserve team in USL Pro (Freedman, 2013). LA Galaxy would become the first club to initiate the latter with its “Los Dos” project at the start of the 2014 season and eventually other MLS clubs followed suit (Boehm, 2017).

In just under a decade, the partnership between the two domestic leagues helped galvanize USL, which underwent extensive league expansion, two commercial rebrands, and was sanctioned by the USSF as a second division league in 2018. Coinciding with their second rebrand, USL also launched a third division league, USL League One, situated below its second division league, USL Championship (USLSoccer, 2018). Consequently, several MLS clubs maintained their affiliate relationships or independent reserve team operations in USL Championship, while a handful of others elected to sign affiliate agreements with newly formed USL League One clubs or operate their own independent reserve teams in the new third

division league. At the height of the partnership in 2019, most MLS clubs had contracted reserve team players in the multidivisional USL.

Although the partnership between MLS and USL was established as a player development initiative, the long-term stability of affiliate agreements and independent reserve teams were often in flux for most MLS clubs (Strauss, 2021), aggravating their strategic efforts to maintain a cohesive talent pathway. After the 2020 season, Orlando, Portland, and Philadelphia withdrew their reserve teams from USL in part due to the financial implications of Covid-19 (Mood, 2020), and when MLS announced the launch of its own third division league, MLSNP, in the Fall of 2021, it initiated a significant exodus of RTs from USL prior to the 2022 and 2023 seasons that followed (MLSsoccerStaff, 2021b, Strauss, 2021, West, 2023). This marked the end of a unique decade-long player development initiative between two commercially independent domestic leagues in the US and signalled the beginning of MLS assuming complete control of its PPP.



Figure 2.2. A timeline of ‘affiliate agreements’ and independent RT operations from 2013 to 2023.

Notes: In 2015, United Soccer Leagues rebranded as United Soccer League (USL), dropping the league name USL Pro. In 2017, USL was granted *provisional* division two status by the NGB, US Soccer, and then granted full division two status in 2018. In 2019, the second division and third division leagues rebranded as USL Championship and USL League One, respectively. In 2022, MLS launched its own third division league, MLSNP.

2.5 Roster and financial regulations

Building a FT roster in MLS requires extensive knowledge of the league’s ‘player acquisition mechanisms’ and the accompanying financial regulations enforced by the league office in New York. Each club must assemble its roster by adhering to a ‘soft’ salary cap that is determined by a collective bargaining agreement (CBA) negotiated between the league owners and MLSPA (Brownlee and Lorgnier, 2017, Coates et al., 2016). The CBA, which was most recently ratified in 2021 (Table 2.3), also stipulates the annual sum of ‘allocation money,’ which are two sources of supplementary currency regulated by the league that clubs can use to ‘buy-down’ a portion of a player’s salary (MLSsoccerStaff, 2021a, MLS, 2024c). Allocation money is made available to clubs as either General Allocation Money (GAM) or Targeted Allocation Money (TAM). The former can be used to reduce the budget charge for all players, while the latter is predominantly used by clubs to fund the recruitment of marquee players (Bradbury, 2021). Additionally, both GAM and TAM can now be used to sign homegrown players to their first professional contract in MLS (MLS, 2024c). Ultimately though the purpose of ‘allocation money’ is to provide clubs greater means of managing their roster builds and incentivizes them to spend more on highly coveted talents in the global soccer market (Bradbury, 2021, Coates et al., 2016).

Table 2.3. The MLS’ annual increase in salary budget, GAM, and TAM.

Year	Salary Budget	GAM	TAM
2021	\$4,900,000	\$1,525,000	\$2,800,000
2022	\$4,900,000	\$1,625,000	\$2,800,000
2023	\$5,210,000	\$1,900,000	\$2,720,000
2024	\$5,470,000	\$2,585,000	\$2,400,00
2025	\$5,950,000	\$2,930,000	\$2,225,000
2026	\$6,425,000	\$3,280,000	\$2,125,000
2027	\$7,068,000	\$3,921,000	\$2,025,000

2.5.1 First team roster

An active roster may be comprised of up to 30 players with roster slots 1-20 and 21-30 defined as the senior and supplemental roster, respectively. There are a finite number of international roster slots ($n = 233$) annually divided among the 29 clubs that are tradeable, resulting in some clubs having more than eight and some less than eight during any given season (MLS, 2024c). To enable its clubs to recruit highly talented players, the league has introduced various marquee player categories over the years, including the Designated Player (DP) in 2007, the Young Designated Player (YDP) in 2012, and most recently, the U-22 Initiative in 2021. These player categories guarantee lucrative financial compensation for the leagues' most high-profile talent without burdening the salary cap and were created to help increase the popularity and marketability of MLS on both a global and local scale (Macuga and Kim, 2023, Rewilak, 2023). While the DP Rule may have favoured larger market clubs with greater financial resources (Brownlee and Lorgnier, 2017), MLS introduced the YDP to encourage its clubs to sign younger developing talent (≤ 23 y) because the league's public image was becoming tarnished by being labelled a 'retirement league' (Macuga and Kim, 2023). Previously, the number of DP rostered players impacted the number of U-22 Initiative spots a club could utilize in a given season, but this was recently eliminated midseason of 2024, giving clubs more autonomy to sign both established and emerging talents in the transfer market (MLSsoccerStaff, 2024). At present, it would seem the league is employing a strategy that encourages its clubs to scout and recruit young potential talent either domestically or abroad (Macuga and Kim, 2023).

2.5.1.1 Homegrown player

In 2008, MLS' homegrown player initiative enabled clubs to sign their academy players to professional contracts and designate them as homegrown players on their active rosters. To sign a

player to a FT contract and register him as a homegrown player, said player must reside in the club's homegrown territory (see *Homegrown territory rule*), have spent at least one year in the club's YA, and meet other unspecified league requirements (Lowy, 2023). Once signed, a homegrown player may occupy a slot on either the senior or supplemental roster. At minimum, the supplemental roster slots 29 and 30 were previously reserved exclusively for homegrown players, but MLS recently removed this regulation at the start of the 2024 season (MLS, 2024c). MLS clubs are not subject to homegrown player quotas from either the Canadian or US federations, nor the regional governing body, CONCACAF, unlike European clubs, which are mandated to meet certain player quotas within their 25-man roster that are set by the Union of European Football Association (UEFA) for those clubs competing in continental cup competitions (e.g., UEFA Champions League and Europa League) (UEFA, 2014). At present, however, it is unknown why MLS discontinued its aforementioned homegrown player rules for roster slots 29 and 30.

2.5.1.2 Homegrown territory rule

In conjunction with MLS' homegrown player initiative, the league has also enforced a homegrown player recruitment policy, known as the 'homegrown territory rule.' It stipulates the geographical boundaries that each club's YA must exclusively conduct its TID enterprises (e.g., youth club affiliations, talented identification camps, youth tournaments and clinics) without any interference from another MLS club (MLS, 2024b). Consequently, clubs have historically been barred from actively scouting and recruiting youth players from other clubs' designated market territories. The geographical boundaries for each club have been defined and altered by MLS as the league has expanded and vary based on market size. For example, several market territories are demarcated by a 75–100-mile radius expanding from either the club's stadium or training site, while other clubs in smaller markets are allocated an entire US state or several states to fulfil their

talent identification strategies. Moreover, for clubs in the US states of Missouri and Ohio, the geographical boundaries are demarcated by county lines with several clubs given clearance to scout and recruit players in the same counties that are less densely populated. Table 2.4 provides an overview of each club's homegrown territory as described by the most recently released '2024 MLS Player Development Guidelines.'

The territory rule has been the subject of significant debate for several years among fans and various stakeholders working in the MLS ecosystem (Tenorio, 2018). Many have argued that the league has allowed each of its franchise owners to passively monopolize their respective market's talent pool and subsequently handicapped the capabilities of the growing North American talent pool, which has recently become more active in the transfer market and garnered significant interest from European clubs that are keen on signing young players from the US and Canada (Tenorio, 2020). In 2022, it was reported that the relaxed its territory rules by installing a new youth player protected list, potentially restricting the movement of up to 54 players in each club's market territory but meanwhile granting more freedom of movement to those youth players not on said list (Stejskal and Tenorio, 2022). Almost two years later in 2024, MLS publicly released the rules governing what it refers to as 'homegrown exclusivity' which stipulates that clubs may select up to 45 players registered within their academy and an additional 9 players who have either a permanent address or currently reside in their homegrown territory, and put these 54 players onto their 'homegrown player list,' which means they are ineligible to be recruited by other MLS clubs (MLS, 2024b).

Table 2.4. The homegrown territories adapted from the ‘2024 MLS Player Development Guidelines.’

Club	Homegrown territory
Atlanta United FC	The state of Georgia and several specific counties located in Tennessee (n = 5)
Austin FC	Various counties located in Texas (n = 42)
Charlotte FC	The states of North and South Carolina
Chicago Fire FC	A 75-mile radius of the club's stadium, including Milwaukee County
Colorado Rapids	The states of Colorado and New Mexico, excluding El Paso, Texas
Columbus Crew	Various counties located in Ohio (n = 74), including some of which may be shared with FC Cincinnati
D.C. United	A 75-mile radius of the club's stadium
FC Cincinnati	Various counties located in Ohio (n = 64), including some of which may be shared with Columbus Crew, as well various counties located in Indiana (n = 16) and Kentucky (n = 27)
FC Dallas	A 75-mile radius of the club's stadium, and all of Texas north the Dallas-Fort Worth area.
Houston Dynamo FC	Various counties located in Texas (n = 30)
Inter Miami CF	A 100-mile radius of the club's home stadium, excluding any non-Floridian territories
Los Angeles Football Club	A 75-mile radius of the club's stadium, excluding San Diego County
LA Galaxy	A 75-mile radius of the club's stadium, excluding San Diego County
Minnesota United FC	The states of Minnesota and Wisconsin, excluding a 75-mile radius from Chicago Fire FC's stadium, but including Milwaukee County
CF Montréal	All of Canada, excluding: (i) Provinces of British Columbia, Alberta, Saskatchewan, and Manitoba; and (ii) a 50-mile radius from Toronto FC's stadium
Nashville SC	The state of Tennessee, excluding several counties part of or adjacent to Chattanooga (n = 5); Specific counties part of or adjacent to Huntsville, Alabama (n = 4)
New England Revolution	A 75-mile radius of the club's stadium, plus the state of Rhode Island
New York City FC	A 75-mile radius of the club's stadium, excluding a 25-mile radius from Philadelphia Union's home stadium
New York Red Bulls	A 75-mile radius of the club's stadium, excluding a 25-mile radius from Philadelphia Union's home stadium
Orlando City SC	A 100-mile radius of the club's stadium, plus to the north of said stadium, the remainder of the state of Florida
Philadelphia Union	A 75-mile radius of the club's stadium, excluding: (i) the state of Maryland; and (ii) a 25-mile radius from New York Red Bull's home stadium
Portland Timbers	The states of Idaho, Oregon, and New Mexico, and including Vancouver, Washington state, and their vicinities
Real Salt Lake	The states of Utah and Arizona
San Diego FC	In the US, a 75-mile radius of the club's training facility, excluding Orange County; In Mexico, a 62.1 mile (100-km) driving distance from the club's training facility
San Jose Earthquakes	A 75-mile radius of the club's stadium
Seattle Sounders FC	The states of Hawaii and Washington, excluding a 50-mile radius from Portland Timbers's home stadium
Sporting Kansas City	The states of Kansas and Oklahoma; the state of Missouri, including some of which may be shared with St. Louis City SC, but excluding various specific counties adjacent to St. Louis (n = 34)
St. Louis City SC	The state of Arkansas, excluding several specific counties (n = 5); the state of Missouri, including some of which may be shared with Sporting Kansas City, but excluding various counties adjacent to Kansas City (n = 25); Several specific counties located in central Illinois (n = 8) plus the remainder of Illinois to the south of these specified counties, as well as two specific counties in Indiana
Toronto FC	All of Canada, excluding the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, and Quebec
Vancouver Whitecaps FC	All of Canada, excluding: (i) a 50-mile radius from Toronto FC's stadium; and (ii) the Province of Quebec

2.5.2 Reserve team roster

An active roster for MLSNP may be comprised of up to 35 players with roster slots 1-24 made up of professional players, either international or domestic, or players on loan (e.g., FT players loaned down). Each team's roster has seven roster slots for international players, which may be traded, but these roster slots expire at the end of the season (MLS, 2024a). Roster slots 25-35 may be filled with amateur academy players, which the league specifies as an individual under the age of 21, who has not competed in any collegiate soccer programme and is currently representing the club's academy in MLS Next (MLS, 2024a). Also, per league rules, there may only be a maximum of five YA players per team on the field during official match play (MLS, 2024a). This latter roster regulation would seem to encourage the transition of academy players into the professional RT setting. On the contrary, while this regulation may present academy players with the opportunity to learn to adapt to a lower tier professional league, it may also diminish the pressures associated with professional soccer and subsequently attenuate the development for others (Webb et al., 2020). Future qualitative research is therefore warranted to address the views of different stakeholders involved in the third division league to understand its role and impact on player development and its suitability in preparing players for first division soccer in MLS.

2.6 Annual calendar

The annual calendar for MLS' professional and youth divisions entails preseason, in-season, postseason, and off-season phases (Figure 2.3). Interestingly, there is a calendar misalignment within the MLS ecosystem, and it is unknown whether this presents any challenges for practitioners charged with implementing their club's TID working practices.

Competition [Level]	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Major League Soccer [First Team]	Off- season	Preseason	In-season								Post-season	Off- season
MLS Next Pro [Reserve Team]	Off-season	Preseason	In-season							Post- Season	Off-season	
MLS Next [Youth Academy]	Winter Pause	In-season				Post- season	Off- season	Preseason	In-season			Winter Pause

Figure 2.3. Annual calendar(s) for the professional and youth divisions within the MLS ecosystem.

2.6.1 First division league: MLS

Unlike European soccer, MLS runs its entire competitive season within the calendar year, in part to avoid freezing temperatures in winter as well as commercial broadcast competition with other major American sports (Jewell, 2014). FTs in MLS generally hold a 6-week preseason period that commences in January. Clubs located in more northern latitudes typically travel south to US states with warmer climates, such as Arizona, California, and Florida, or even abroad to Central and South America to hold their preseason training camps. Next, a 31-to-34-week in-season period kicks off in February-March, encompassing league play, separate domestic cup competitions for US- and Canada-based clubs, as well as continental and single-cup competitions (Table 2.5). Over the course of its brief history, MLS' first division has lengthened its in-season phase in an effort to avoid fixture congestion caused by the growing number of expansion clubs (Mansfield et al., 2019). Additionally, the first division also does not hold temporary pauses during in-season nor postseason phases to observe FIFA international windows, which can present a significant challenge for clubs when multiple players in their rosters are called up for international duty by their respective senior national teams (Goff, 2023). The in-season phase concludes in late October and the team with the greatest sum total of points is awarded the Supporter's Shield. Similar to other major American sports (i.e., American football, baseball, and basketball), however, MLS holds a postseason playoff tournament, which are structurally arranged by the league's

geographical conferences and the tournament format has been adapted by the league on multiple occasions throughout its history (MLSsoccerStaff, 2023b, Maurer and Rueter, 2023).

Table 2.5. Professional competition programmes for FT players in MLS.

Competition	Description
Campeones Cup	An annual single competitive match that is contested between the previous year's MLS Cup champion and the Campeón de Campeones from Liga MX.
Canadian Championship	An annual knockout domestic cup competition exclusively contested between professional Canadian clubs in MLS, the Canadian Premier League, and the champions of three semi-professional leagues in Canada, including League1 Ontario, League 1 British Columbia, and Ligue 1 Québec. The tournament is organized by the Canadian Soccer Association.
CONCACAF Champions Cup	An annual continental club competition organized by the regional governing body, CONCACAF, and held between February and May. The tournament format has undergone multiple adaptations since 2008. The latest format entails 27-teams competing in five knockout rounds with two-legged home-and-away ties.
Leagues Cup	An annual knockout competition that is contested between clubs from MLS and Liga MX. In 2023, the tournament expanded to include all clubs from both leagues and hosted during the months of July and August. The tournament's champion, runner-up and third place finisher secure their places in the CONCACAF Champions Cup for the following year.
MLS All-Star Game	An annual friendly match hosted by MLS and typically held in July-August, the midpoint of the in-season phase. Hosted as part of MLS All-Star Week, the match is contested between a prominent international club and selected MLS players chosen by a system of fan voting and selections made by the appointed All-Star team head coach as well as the league commissioner. Previously, MLS All-Star Week also featured the MLS Homegrown Game, but was later replaced by the MLS Next All-Star Game, featuring top talents from MLS' youth domestic league.
US Open Cup	An annual knockout domestic cup competition contested between both professional and amateur clubs in the US. The single-elimination tournament, organized by the USSF, is the oldest soccer cup competition in the US.

2.6.1.1 League geography and climate

Presently, MLS' 29 actively competing clubs are located in various regions of North America, split across four time zones, including fourteen in Eastern Time (UTC-5:00), seven in Central Time (UTC-6:00), two in Mountain Time (UTC-7:00), and six in Western Time (UTC-8:00). Consequently, clubs are divided into two conferences according to their geographical location and their competitive fixtures predominantly consist of intra-conference competition to mitigate extensive trans-meridian air travel, particularly for those clubs located on the continental coastlines (e.g., Inter Miami CF, Seattle Sounders FC, Vancouver Whitecaps FC, etc.). During the

2023 season, the Eastern and Western conferences consisted of 15 and 14 clubs, respectively. Still, the considerable distances between clubs ensure teams regularly undertake short- (<3 h) and medium-haul (3-6 h) air travel for competitive fixtures. Consequently, this frequent travel can not only force adaptations to team's training plans, but it can also impair players' sleep and recovery (Gilbert et al., 2020).

The distribution of clubs across the North American continent also predisposes players to playing in variable environmental conditions, such as heat, cold, different relative humidities, and low altitude (500 – 2000 m), which can impair their physical performance outputs (Bärtsch et al., 2008, Draper et al., 2023). For example, during the height of the summer months (i.e., July-August), the home venues for Houston Dynamo FC (Houston, TX; Mean Daily Maximum Temperature = 38.2°C) and Orlando City SC (Orlando, FL; Mean Daily Maximum Temperature = 35.5°C) are particularly oppressive due to their location in humid subtropical climates (NWS, 2025). In contrast, low temperatures are routinely recorded at the start of the in-season phase (i.e., February-March), as well as during the postseason (i.e., October-December) for clubs in the northern US, such as Minnesota United FC (Saint Paul, MN; Mean Daily Minimum Temperature = -18.6°C), as well as clubs in Canada with outdoor soccer-specific stadiums (i.e., Toronto FC and CF Montreal) (NWS, 2025). Additionally, Colorado Rapids (Dick's Sporting Goods Park, Commerce City, CO; 1592 m) and Real Salt Lake (America First Field, Sandy, UT; 1349 m) host their matches at venues in cities located at relatively higher elevations (USGS, 2025).

2.6.2 Third division league: MLS Next Pro

Like MLS, the competitive season for MLSNP also begins and ends within the calendar year. The 28 teams in the new third division domestic league are evenly split into two geographical conferences. Teams in each conference are split again and organized into two divisions (i.e.,

Northeast, Central, Frontier, and Pacific). The in-season commences in late March and typically is preceded by a 6-week preseason. Further, the 26-week in-season phase includes 24 matches for each team, finishes in mid-September, and is followed by a postseason playoff tournament. As for domestic cup competition, only two independent MLSNP clubs are eligible to compete in the US Open Cup (i.e., Carolina Core FC and Chattanooga FC), while RT with organisational ties to a parent club in MLS have historically been barred from competing. However, when MLS announced the withdraw of its US-based clubs' FTs from the competition in December 2023, opting to enter its RT instead, the decision was initially rejected by the USSF before an agreement was reached, permitting 9 RTs from MLSNP to enter the 2024 edition of the tournament. While this move by MLS concurrently reduces the number of fixture congestion scenarios for FT players (i.e., a minimum of two matches with ≤ 4 days recovery) and provides developing RT players more meaningful match play opportunities (Page et al., 2023), the decision was met with heavy criticism from fans and US media outlets given the tournament's history and tradition and its role in the greater US soccer ecosystem (Rueter, 2024, Rueter, 2023).

2.6.3 Youth league: MLS NEXT

The youth domestic league's annual calendar breaks tradition with North American soccer norms and instead mirrors European soccer with its preseason and in-season phases commencing in late-July and mid-September, respectively. MLS Next's 9-month season observes a brief winter-pause, from late December to early January, before resuming the remainder of the in-season phase in the new year. In addition to domestic league play, there are also a host of auxiliary competition programmes that academy players can compete in, including the Generation Adidas Cup, an annual youth tournament featuring both MLS academies and professional academies from around the world. Like the professional levels in the MLS ecosystem, however, MLS Next also features a

postseason phase involving a playoff tournament held in late-June followed by a 3-to-4-week off-season period. During the off-season phase, which coincides with the first division's MLS All-Star Week (Table 2.5), the youth league since its inception has opted to host its MLS Next All-Star Game, a single friendly match between top talents from the Eastern and Western conferences. The calendar misalignment between the professional and youth divisions may be unique to North American soccer and warrants further investigation to assess its impact on the working practices of club practitioners involved in TID within MLS.

2.7 Conclusion

To summarise, this chapter has presented a detailed overview of the talent development pathway in MLS. In doing so, it has extended the field by providing more of a contextualised and nuanced perspective by including evidence on the growing organisational structure of the various clubs, the roster regulations concerning homegrown players, and information on the annual calendars across the MLS ecosystem. From a research perspective, this chapter also provides some areas which are currently under explored (e.g., the practice activities employed by youth coaches, the relative age effect within the YA system, the influence of biological maturation on player selection, etc.) and the principal investigator would encourage applied practitioners working in MLS to consider future studies in these areas.

Chapter 3

The Youth-to-Senior Transition in Male Professional Soccer: A Mixed Methods Systematic Review

3.1 Overview

This chapter presents the first study of this thesis: A Mixed Methods Systematic Review (MMSR) examining the youth-to-senior transition in male professional soccer. The review integrates findings from both qualitative and quantitative research to explore the challenges faced by players and the organisational strategies used by clubs to support them. The MMSR was conducted using established guidelines for mixed methods reviews, and its findings form a foundational platform for the case-based studies in **Chapters 4-6**.

3.2 Introduction

A defining moment in a soccer player's career is signing their first professional contract (FIFA, 2021), signalling a key turning point in their development both on and off the field (Stambulova et al., 2021). Despite the proliferation of systematic player development programmes embedded within modern professional soccer clubs (Ford et al., 2020), the transition from the YA to the FT remains a formidable challenge for many players. This within-career transition is referred to as the youth-to-senior transition in academic literature and can last upwards of four years (Finn and McKenna, 2010). During this period, players must grapple with both stress and uncertainty as they pursue a professional playing career, striving to secure a coveted spot in the FT and be selected to play in official competitions (i.e., domestic league, domestic cup, continental cup, etc.). For most though, they are unprepared to cope with the demands in the FT environment and lack the necessary skills and experience to perform at the top level (Richardson et al., 2012). Nevertheless, there are evolving working practices within professional clubs increasingly focused on long-term player development initiatives, incorporating specific strategies designed to provide talented prospects with essential exposure to senior environments, which is critical for their professional development (FIFA, 2021).

To date, sport psychology scholars have led research endeavours to explore career transitions in elite sport (Stambulova et al., 2021). More recently, a host of book chapters have addressed sport-specific elements of the youth-to-senior transition within professional soccer (Chamorro et al., 2019, Lundqvist and Schary, 2023, Morris and Deason, 2020), summarizing key terminology, theories, models, and practical implications that are relevant to both applied researchers and various club stakeholders charged with successfully progressing talented young players into professional FT soccer. While these contributions have been instrumental in shaping our conceptual understanding of the youth-to-senior transition, much of the foundational research has relied on qualitative methodologies (Drew et al., 2019). This qualitative focus has been valuable in identifying the subjective experiences of transitioning players, yet it has left gaps in empirical, data-driven insights regarding the physiological and performance demands of the FT environment. In recent years, applied sports science practitioners working in professional clubs, have sought to address these gaps by employing quantitative methods to examine physical performance differences between competition levels (Kavanagh et al., 2024, Smalley et al., 2022, Taylor et al., 2023). These quantitative studies have provided evidence on the heightened physical demands faced by transitioning players, complementing earlier qualitative research that identified these challenges as a critical component of the transition process (Drew et al., 2019).

Given the increasing body of research spanning multiple disciplines, including psychology, physiology, and TID, a systematic mixed methods approach is necessary to integrate these diverse perspectives. Accordingly, the aim for the present study was to conduct a MMSR to provide both an overarching summary and critical synthesis of the available literature on the youth-to-senior transition in male professional soccer. In doing so, this study will also identify and emphasize key organisational strategies employed in professional clubs that aim to help promote top young talent

to the FT environment and ultimately fulfil long-term player development initiatives. Consequently, this MMSR will begin to address a pertinent research question, specifically, what are the key challenges and organisational strategies associated with the youth-to-senior transition in male professional soccer, and how do these factors influence long-term player development outcomes?

3.3 Methods

3.3.1 Search strategy

This MMSR was informed by methodology established by the Joanna Briggs Institute and is reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Aromataris et al., 2015, Page et al., 2021). To adhere to PRISMA guidelines, a systematic search of six electronic databases (CINAHL, MEDLINE, PsycInfo, PubMed, SPORTDiscus, and Web of Science) was conducted to identify original research articles written in English published from 2010-2023. The search strategy employed was agreed upon by the research team, and subsequently implemented on 17 February 2024, using the search syntax presented in table 3.1. After performing previous pilot searches, relevant keywords were combined using the Boolean ‘OR’ operator and the resultant search strings were combined using the ‘AND’ operator. For this MMSR, pertinent terminology of career transitions in professional soccer and their definitions are also presented in table 3.2.

Table 3.1. Search strategy implemented to identify relevant articles on the youth-to-senior transition in male professional soccer.

Search syntax	Keywords
Search string 1 (Sport)	football OR soccer
Search string 2 (Population)	academy OR adolescent OR adult OR elite OR junior OR pro* OR senior OR under* OR young OR youth
Search string 3 (Phenomenon)	transit* OR progress* OR with* career OR career transit* OR career* progress* OR loan OR loan transit*

Table 3.2. Terminology and definitions used for the systematic review.

Term	Definition
Within-career transition	Transitions that occur during a whole sporting career from beginning to end (Stambulova et al., 2021).
Youth-to-senior transition	A normative transition, whereby a player receives a professional contract and progresses from youth, age-restricted academy soccer to adult professional soccer. Also referred to as the junior-to-senior transition in various peer-reviewed literature (e.g., Drew et al. 2019), or the academy to first team transition in the context of professional soccer (e.g., Swainston et al., 2020).
Loan transition	A quasi-normative temporal transition, whereby a professional club temporarily transfers playing talent to another club to experience a new training and competition environment (Bond et al., 2020).

3.3.2 Study selection

All articles identified from each database were downloaded to Rayyan (Rayyan Systems Inc, Cambridge, MA), a free online review management software that was utilized for study selection purposes. Duplicate articles were detected by AI-powered tools and subsequently removed manually before the remaining articles were screened against inclusion-exclusion criteria defined in table 3.3. The principal investigator completed the screening process over two phases. In the first phase, articles were initially excluded based on the content of the titles and abstracts, while a full text review was carried out in the second phase. The reference lists of all articles selected for critical appraisal were screened for additional studies. The principal investigator's academic supervisors independently cross-examined both selected and rejected articles, and disagreements were resolved through discussion and consensus via online video calls (Microsoft Teams, Microsoft, Redmond, WA).

Table 3. 3. Inclusion and exclusion criteria adopted for the screening process.

Inclusion criteria	Exclusion criteria
Original peer-reviewed research article	Systematic reviews, editorials, commentaries, and grey literature
Published in English	Title or abstract does not contain any keyword(s) from the 3 rd search string
Quantitative, qualitative, and mixed method designs	Investigations involving a different team sport (e.g., rugby) or individual sport (e.g., tennis)
Published or available ahead of print before 1 January 2024	Federation or national team-oriented player transition data
	Transitions into semi-professional soccer
	Female participants

3.3.3 Assessment of methodological quality

The methodological quality of all included studies was assessed using the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018). The MMAT permits researchers to appraise the methodological quality of five study categories, and has demonstrated efficiency and reliability, with previous research indicating moderate to perfect agreement between independent reviewers when applying its criteria across various study designs (Pace et al., 2012). When employing the MMAT, researchers complete two screening questions before responding to five bespoke criteria questions pertaining to the methodological quality for qualitative and quantitative study designs (Table 3.4). Each criteria question can be answered with one of three responses (i.e., “yes,” “no,” or “can’t tell”). Following MMAT guidelines, this review does not assign overall quality scores to the included studies. Instead, it presents a summary table of the individual ratings to inform readers about the methodological quality of each study. Further, the authors of the MMAT discourage excluding studies with low methodological quality. To avoid bias, one of the principal investigator’s academic supervisors served as an independent reviewer and disagreements over answers to criteria questions were resolved once again via online video calls

Table 3. 4. Criteria questions within the MMAT appraisal tool for qualitative, quantitative non-randomized, and quantitative descriptive studies, which were all included in the present MMSR.

Study category	Methodological quality criteria
Qualitative	1. Is the qualitative approach appropriate to answer the research question? 2. Are the qualitative data collection methods adequate to address the research question? 3. Are the findings adequately derived from the data? 4. Is the interpretation of the results sufficiently substantiated by data? 5. Is there coherence between qualitative data sources, collection, analysis and interpretation?
Quantitative non-randomized	1. Are the participants representative of the target population? 2. Are measurements appropriate regarding both the outcome and intervention (or exposure)? 3. Are there complete outcome data? 4. Are the confounders accounted for in the design and analysis? 5. During the study period, is the intervention administered (or exposure occurred) as intended?
Quantitative descriptive	1. Is the sampling strategy relevant to address the research question? 2. Is the sample representative of the target population? 3. Are the measurements appropriate? 4. Is the risk of nonresponse bias low? 5. Is the statistical analysis appropriate to answer the research question?

3.3.4 Data extraction and transformation

To initiate this process, articles were first arranged chronologically by their publication date. Next, data from both qualitative and quantitative studies were extracted. The following data, where possible, were extracted from each article:

- **Research methodology:** qualitative, quantitative, or mixed
- **Location:** country in which the study occurred
- **Demographics:** number of participants, participants' role, chronological age, or years' experience
- **Study methods:** qualitative and/or quantitative data collection
- **Study findings:** generated themes and/or results from statistical analyses

Following data extraction, the next stage was to codify quantitative data into qualitative data (i.e., “qualitizing”). This process entailed extracting data from quantitative studies and translating or converting it into rich, textual description to ensure it better integrated with data extracted from the qualitative studies (Stern et al., 2020).

3.3.5 Data synthesis and integration

Guided by narrative synthesis principles outlined by Petticrew and Roberts (2006), the full texts of each article were systematically organized for [1] within-study analysis and [2] cross-study synthesis. The aim here was to examine the included studies and provide readers with a clear, coherent summary of the tabulated studies’ critical appraisal, methodologies, and findings (Petticrew and Roberts, 2006). In the final stage, a comprehensive synthesis of the emerging patterns across the studies was conducted, accompanied by a critical commentary that integrates findings from both the qualitative and quantitative data. This commentary highlights findings that enhance our overall understanding of the youth-to-senior transition in male professional soccer.

3.4 Results

3.4.1 Search findings

The six electronic databases yielded 3377 research articles (Figure 3.1). After duplicates were removed, a total of 1712 articles had their title and abstract screened, resulting in further exclusion of 1685 articles. Of the 27 full texts assessed, 25 met the full inclusion criteria and included in the final review. Two studies were excluded because they contained data from female participants ($n = 1$) and non-professional participants who were transitioning to an amateur club’s FT ($n = 1$). The eligible studies included qualitative ($n = 13$) and quantitative ($n = 12$) research designs. The UK and continental Europe were the predominant locations where research was being conducted to investigate the youth-to-senior transition in male professional soccer. A simple

chronological analysis of studies considered in this review, spanning from 2010 to 2023, reveals that over two thirds (72%) were published from 2020 onwards. This trend underscores both an increasing interest and acceleration of research in this field since the new decade. Several articles identified were published online ahead of print in 2023 and were later formally published in 2024 (e.g., Lundqvist et al., 2024; McGuigan et al., 2024).

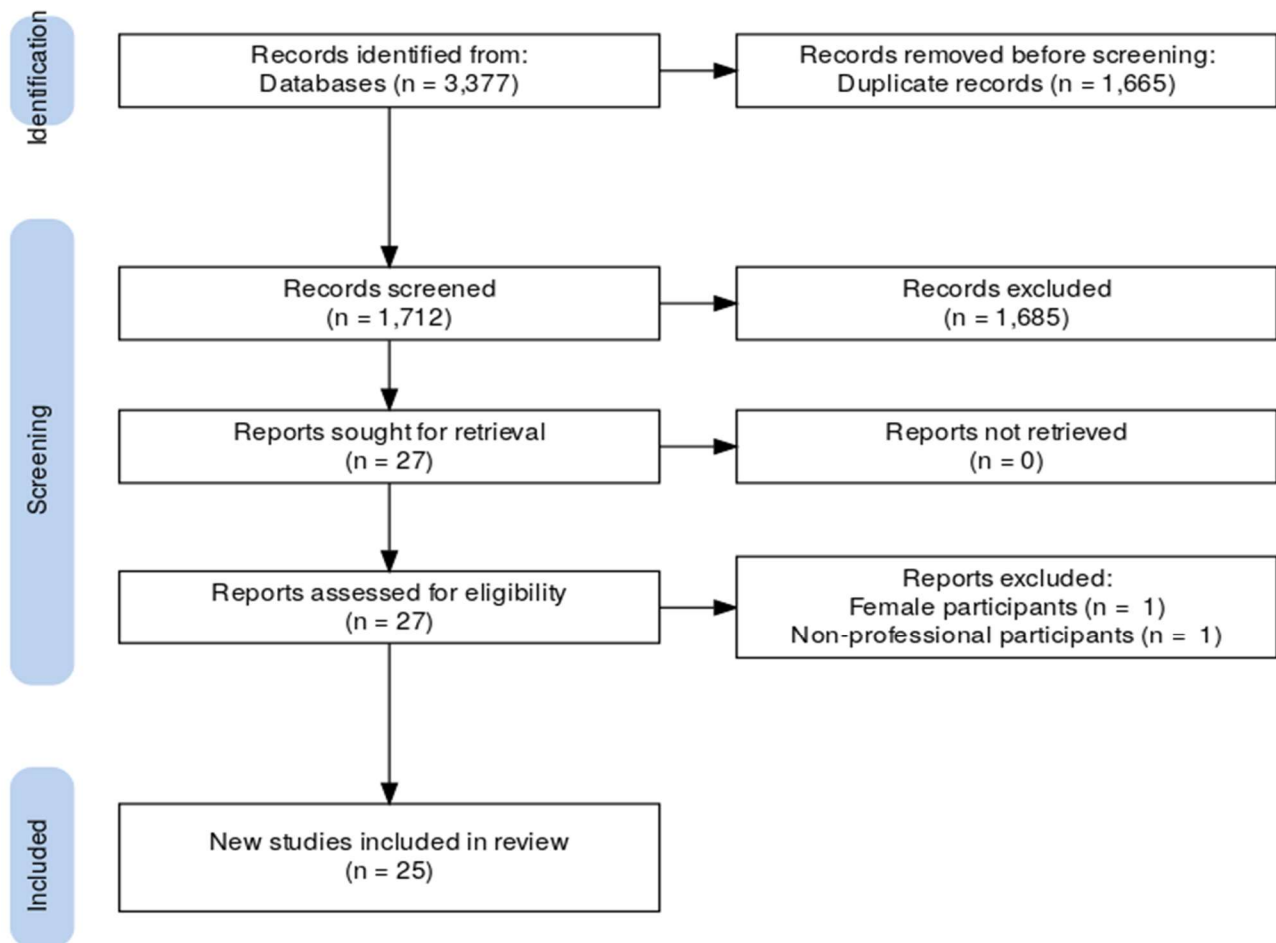


Figure 3.1. PRISMA flow diagram.

3.4.2 MMAT appraisal

The present review involved critical appraisals of three study categories, including qualitative (n = 13), quantitative non-randomized (n = 6), and quantitative descriptive (n = 6). Table 3.5 presents the results of the MMAT appraisal for the 25 included studies. In the qualitative

studies, researchers predominantly utilized semi-structured interviews and thematic analysis to explore the youth-to-senior transition. Although interviewing is a traditional and popular method of data collection, it is often critiqued for its shortcomings related to quality data capture given the inherently challenging nature of conducting interviews, particularly for researchers unfamiliar with qualitative approaches (Melissa and Lisa, 2019). To avoid the pitfalls of one-off, retrospective interviews, one study included an innovative longitudinal approach that involved collecting multiple video diaries from players which captured their experiences in the midst of the transition process, providing not only enhanced quality data capture, but also a rich, textual understanding of challenges and patterns over time (Swainston et al., 2020).

Thematic analysis, or iterations of this qualitative data analysis technique, was employed in a majority of the qualitative studies given its relatively clear and flexible process (Braun and Clarke, 2006, Nowell et al., 2017). However, thematic analysis is often misunderstood, rendering confusion and ambiguity regarding its philosophical underpinnings and drawing criticism from some due its imprecision if epistemological foundations are not clearly stated (Kiger and Varpio, 2020). One study employed framework analysis to investigate applied issues, resulting in the development of a working framework for the participatory professional club involved (McGuigan et al., 2024). Additionally, several forms of document analysis in conjunction with qualitative interviews were also adopted in two studies (i.e., Relvas et al. 2010; Morris et al. 2015) whereby researchers examined documentation provided by participatory clubs along with secondary records available in the public domain. Document analysis can provide researchers with not just valuable supplementary data and contextual information, it can also help monitor change over time, raise important questions, and be used to corroborate evidence, but researchers must ensure they clearly define their procedures and the outcomes of the analyses of documents to give readers greater

confidence in the credibility of their findings (Bowen, 2009). Table 3.7 presents the data collection methods and generated themes from each qualitative study, along with prominent quotes from select study participants.

As previously reported, both quantitative descriptive and non-randomized designs were identified in the present MMSR. For the latter design (see Table 3.9), GPS data was primarily used to address physical performance output differences between FT players and their chronologically younger RT and YA counterparts (Craig et al., 2024, Harel et al., 2020, Houtmeyers et al., 2021, Martin-Garetxana et al., 2023, Thoseby et al., 2023). The challenge in analysing these studies' findings collectively, however, is related to inconsistencies in reporting the locomotor demands (e.g., standing, walking, jogging, running, sprinting) in field-based sports, such as soccer, given the lack of clarification and consensus across applied practitioners, researchers, tracking systems, and manufacturers, on the measurement and determination of both velocity thresholds and velocity change thresholds (i.e., acceleration and deceleration) (Sweeting et al., 2017, Torres-Ronda et al., 2022). Further, although the use of two prominent GPS devices were described in the methods of the selected quantitative non-randomized studies, different models were adopted within and between studies, and these different models have a variety of sampling rates (e.g., 10 Hz, 20 Hz, etc.), data-filtering methods, and data-processing algorithms, which means caution is warranted when interpreting the GPS data (Malone et al., 2017).

To address a host of psychological variables associated with the challenges of navigating the youth-to-senior transition, including players' passions, motivations, career expectancies, coping strategies, and burnout symptoms, three quantitative descriptive studies relied on various validated questionnaires, scales, and other bespoke survey instruments for data collection purpose (see Table 3.8). Two studies (Alves da Silva et al., 2021, Chamorro et al., 2016), conducted in

Brazil and Spain, employed translated questionnaires that were validated in previous research, while another study reported performing a preliminary reduction and adaptation process for two questionnaires that were unavailable in Spanish (Jordana et al., 2023). Given the ease of the data collection methods employed in all three of the studies, researchers were able to recruit hundreds of YA participants entering or experiencing this critical transition period (Table 3.6). As for the perceptions of various club personnel, two bespoke, cross-sectional surveys were designed by researchers interested in investigating the youth-to-senior transition process on a regional and global scale (Lundqvist et al., 2024, Mannix et al., 2024). While both consulted outside expertise to establish the surveys' face validity prior to their dissemination, neither reported using standard validation methods, such as principal component analysis or exploratory factor analysis, nor was the internal consistency of questions reported using the Cronbach's Alpha statistic during the development phase (Martindale et al., 2010). Consequently, while these survey instruments demonstrate their ease of use for the research teams employing them, they lack the statistical rigour necessary to be repeated and utilized on a larger scale for more significant data capture.

Ultimately, both the qualitative and quantitative studies included in this MMSR have produced important findings related to the youth-to-senior transition within male professional soccer, but they also have demonstrated methodological shortcomings in their research designs. Future research should prioritize standardizing data collection techniques, applying more rigorous validation processes for survey instruments, improving the precision in qualitative analysis methods, and adopting longitudinal and mixed method designs to enhance the rigour and generalizability of findings on the youth-to-senior transition process in professional soccer, whether examining solely male or female participants, or both.

Table 3. 5. Results of the MMAT appraisal for the included studies.

Study	Category	Screening questions		Quality criteria				
		1	2	1	2	3	4	5
Relvas et al. (2010)	Qualitative	✓	✓	✓	✓	-	✓	✓
Morris et al. (2015)	Qualitative	✓	✓	✓	✓	-	-	✓
Chamorro et al. (2016)	Quantitative descriptive	✓	✓	✓	✓	-	-	✓
Morris et al. (2016)	Qualitative	✓	✓	✓	✓	✓	-	✓
Morris et al. (2017)	Qualitative	✓	✓	✓	✓	✓	-	✓
Dowling et al. (2018)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Røynesdal et al. (2018)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Harel et al. (2020)	Quantitative non-randomized	✓	✓	✓	-	✓	-	-
Mitchell et al. (2020)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Swainston et al. (2020)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Alves da Silva et al. (2021)	Quantitative descriptive	✓	✓	✓	✓	-	-	✓
Carpels et al. (2021)	Quantitative descriptive	✓	✓	-	✓	-	-	✓
Houtmeyers et al. (2021)	Quantitative non-randomized	✓	✓	✓	✓	✓	✓	✓
Abbott & Clifford (2022)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Craig et al. (2022)	Quantitative descriptive	✓	✓	✓	✓	✓	✓	✓
Kent et al. (2022)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Prendergast & Gibson (2022)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Swainston et al. (2022)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Jordana et al. (2023)	Quantitative descriptive	✓	✓	✓	✓	✓	-	✓
Martin-Garetxana et al. (2023)	Quantitative non-randomized	✓	✓	✓	✓	✓	✓	✓
Thoseby et al. (2023)	Quantitative non-randomized	✓	✓	✓	✓	✓	✓	✓
Lundqvist et al. (2024)	Quantitative descriptive	✓	✓	✓	✓	✓	-	✓
Mannix et al. (2024)	Quantitative descriptive	✓	✓	✓	✓	✓	-	✓
McGuigan et al. (2024)	Qualitative	✓	✓	✓	✓	✓	✓	✓
Martin-Garetxana et al. (2024)	Quantitative non-randomized	✓	✓	✓	✓	-	✓	✓

3.4.3 Participant characteristics

The participants were players ($n = 1554$), technical staff ($n = 210$), multidisciplinary staff ($n = 68$), and parents ($n = 10$). Quantitative studies predominantly recruited players as study participants, barring the two survey design studies, which surveyed various club personnel on the youth-to-senior transition process (Lundqvist et al., 2024, Mannix et al., 2024). The sum of player participants from a single quantitative descriptive study was purposely omitted to avoid an inflated and inaccurate total sum of player participants in the present MMSR, as the authors reported collating quantitative data from 2009-2020 from nine longitudinal demographic reports, involving

annually some ~12,000 players from ~470 teams competing in 31 European top division leagues (Carpels et al., 2021). Meanwhile, qualitative studies recruited players, parents, and various technical and multidisciplinary staff to explore the phenomenon. Table 3.6 contains detailed information on the participant characteristics for each study.

Table 3. 6. Participant characteristics from the 13 qualitative and 12 quantitative studies.

Study	Category	Location	Participants	Participants' age / years experience
Relvas et al. (2010)	Qualitative	Europe	26 heads of youth development: England ($n = 6$), France ($n = 2$), Portugal ($n = 5$), Spain ($n = 9$), Sweden ($n = 4$)	Not reported
Morris et al. (2015)	Qualitative	UK	6 coaches: first team manager ($n = 1$), first team coach ($n = 1$), youth coaches ($n = 4$); 1 sport physiologist; 3 players: first team players ($n = 2$), youth players ($n = 4$); 4 parents	Age: 18-62 y
Chamorro et al. (2016)	Quantitative	Spain	478 elite youth soccer players [U-18]	Age: 17.42 ± 0.71 y
Morris et al. (2016)	Qualitative	UK	coaches ($n = 12$): first team manager ($n = 3$), academy manager ($n = 2$), first team coach ($n = 3$), academy coach ($n = 4$); support staff ($n = 10$): sport physiologist ($n = 2$), sport psychologist ($n = 4$), physiotherapist ($n = 3$), sport therapist ($n = 1$); parents ($n = 6$)	Coaches age: 35-71 y; coaches years experience: 25.6 ± 12.2 y; support staff age: 25-54 y; support staff years' experience: 16.3 ± 9.6 y; parents age: 38-56 y
Morris et al. (2017)	Qualitative	UK	5 professional players	Age: 17-19 y
Dowling et al. (2018)	Qualitative	UK	6 under 21 development coaches	Not reported
Røynesdal et al. (2018)	Qualitative	UK	8 elite youth development coaches	Age: 28-59 y; years experience: 6-28 y
Harel et al. (2020)	Quantitative	Israel	4 adult professional players 4 young players [U-21]	Age: adult players = 22-31 y; young players = 18-19 y
Mitchell et al. (2020)	Qualitative	UK	18 club practitioners: academy manager ($n = 8$), youth coach ($n = 6$), education and welfare officer ($n = 3$), head of recruitment ($n = 1$)	Mean age: 34.6 y
Swainston et al. (2020)	Qualitative	UK	3 professional players	Age: 17.85 ± 0.38 y
Alves da Silva et al. (2021)	Quantitative	Brazil	228 youth players [U-20]	Age: 18.1 ± 1.2 y
Carpels et al. (2021)	Quantitative	Europe	~12,000 FT players/year [2009-2020]	Not reported
Houtmeyers et al. (2021)	Quantitative	The Netherlands	11 first team players 9 youth academy players [U-19]	Age: first team players = 25.1 ± 2.8 y; youth academy players = 17.6 ± 0.6 y

Table 3.6 Cont. Participant characteristics from the 13 qualitative and 12 quantitative studies.

Study	Category	Location	Participants	Participants' age / years' experience
Abbott & Clifford (2022)	Qualitative	UK	15 professional players [U-23]	Age: 23 ± 1 y
Craig et al. (2022)	Quantitative	UK	20 youth professional players: development loan players ($n = 4$), squad players ($n = 16$)	Age: development loan players = 19.1 ± 0.9 y; squad players = 17.0 ± 1.1 y
Kent et al. (2022)	Qualitative	UK	11 professional players	Age: 23.0 ± 2.5 y
Prendergast & Gibson (2022)	Qualitative	UK	9 first team managers 3 professional players	Years experience: first team managers = 1.5-7 y; professional players = 2-9 y
Swainston et al. (2022)	Qualitative	UK	6 professional players	Age: 19.5 ± 2.5 y
Jordana et al. (2023)	Quantitative	Spain	515 youth players	Age: 16.7 ± 1.6 y
Martin-Garetxana et al. (2023)	Quantitative	Spain	10 first team players 9 reserve team players	Age: first team players = 27.1 ± 3.9 y (19/20), 28.2 ± 3.9 (20/21); reserve team players = 20 ± 1.1 (19/20), 21.1 ± 1.1 (20/21)
Thoseby et al. (2023)	Quantitative	Australia	21 elite youth players 19 professional players	Age: elite youth players = 17.9 ± 1.3 y; professional players = 26.7 ± 4.0 y
Lundqvist et al. (2024)	Quantitative	Global	29 youth academies: Europe ($n = 19$), South America ($n = 5$), Central America ($n = 1$), North America ($n = 1$), Africa ($n = 1$), Asia ($n = 1$), Oceania ($n = 1$)	Not reported
Mannix et al. (2024)	Quantitative	USA	80 club stakeholders: administration ($n = 5$), coaching ($n = 27$), executive ($n = 4$), sports analytics ($n = 3$), sports medicine ($n = 17$), sports science ($n = 20$), talent identification ($n = 3$)	Years experience: administration = 6.4 ± 5.7 y; coaching = 12.2 ± 8.0 y; executive = 15.2 ± 6.1 y; sports analytics = 3.7 ± 0.6 y; sports medicine = 5.4 ± 6.2 y; sports science = 6.5 ± 4.0 y; talent identification = 15.7 ± 6.7 y
McGuigan et al. (2024)	Qualitative	UK	7 club stakeholders: head of academy ($n = 1$), head of sports science ($n = 1$), lead sport scientist ($n = 2$), coach ($n = 3$)	Not reported
Martin-Garetxana et al. (2024)	Quantitative	Spain	170 professional players: FT player ($n = 60$), RT player ($n = 90$), Shifting player ($n = 20$)	Age: first team player = 27 ± 4 y; reserve team player = 21 ± 2 y; shifting player = 20 ± 2 y

3.4.4 Key organisational strategies

Several organisational strategies related to the youth-to-senior transition process were identified whilst completing this MMSR. Such strategies can be incorporated into a comprehensive transition plan aimed at accelerating the development of players commencing or undergoing the transition to professional FT soccer. The ensuing subsections provide a brief description of each strategy and highlight the studies that either reference or investigate them. Figure 3.2 below presents a schematic model of these organisational strategies employed by professional soccer clubs.

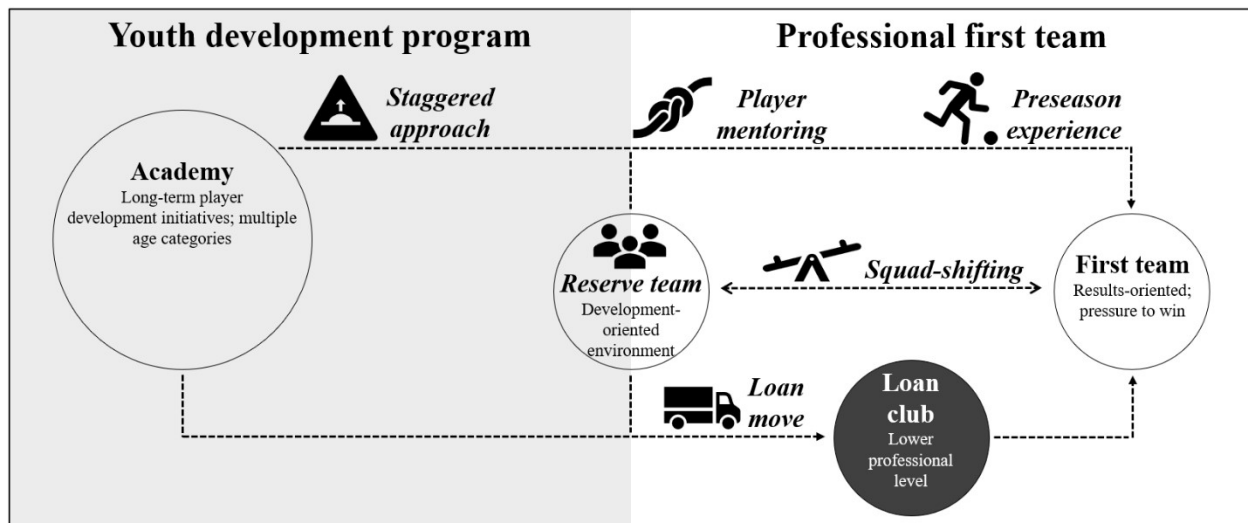


Figure 3.2. The general organisational structure of professional soccer clubs, the organisational aims of each club entity, and the strategies that clubs implement to support player development and transitions into the FT.

3.3.4.1 Staggered approach

Referred to as a ‘staggered entry system’ in a single qualitative study (Morris et al., 2015), this approach entails providing talented academy players with a staggered introduction into the professional setting, whereby they train once or twice a week with the FT, for a period of up to six months prior to a potential permanent move. By allowing young players to gradually integrate themselves with FT players and staff, this organisational strategy may help them better prepare for

the various demands they will face within the FT environment (Røynesdal et al., 2018). Additionally, this strategy allows the FT coaching staff to further gauge and evaluate young players' technical and tactical abilities at a higher level of play before offering them a professional contract with either the RT or FT (Morris et al., 2015).

3.3.4.2 Player mentoring

Clubs can enhance the transition process by implementing a player mentoring programmes, such as a 'buddy system,' in which senior players are paired with youth players to provide guidance and support prior to and during the transition (Morris et al., 2017). Building relationships with senior players can prove to be valuable for learning, and these programmes aim to develop knowledge of the transition by educating young players and raising their awareness of the demands they will face in the FT (Morris et al., 2015, Swainston et al., 2020). Although, some senior players may view an incoming young player as a threat to their job security, particularly if they play in the same position, which may lead to intimidating, or even hostile behaviours (Røynesdal et al., 2018). Nevertheless, researchers have called for more applied work looking into these types of targeted interventions that may improve the likelihood of a successful transition (Swainston et al., 2020).

3.3.4.3 Preseason experience

FT coaching staff may elect to include selected academy or RT players to participate in preseason with the FT, either during specific periods, or for its entirety. In the modern game, FT coaching staff may often invite these players to preseason due to prescribed rest given to key senior players following their participation in a major international tournament with their respective NT. One quantitative non-randomized study compared the physical loading and wellness responses of FT and RT players while training together during a FT preseason and assessed whether the load and wellness of RT players changed when they joined the FT preseason compared to their previous

RT preseason (Martin-Garetxana et al., 2023). Like the abovementioned staggered approach, an invitation offered to academy and RT players to attend preseason training gives them the opportunity to be integrated into the professional FT environment and be assessed by FT coaches and management.

3.3.4.4 Reserve teams

The RT is a key part of a club's talent pathway into the FT, serving as a conduit between the professional FT and YA programme, and providing young players undergoing the transition process more time to address their developmental needs (Dowling et al., 2018). Both a qualitative and quantitative descriptive study each examined the organisational structure of professional clubs (Mannix et al., 2024, Relvas et al., 2010), providing greater insights into the strategic positioning and purpose of the RT, while another qualitative study interviewed RT coaches to explore their role, practices, and approaches to working in this development-oriented environment (Dowling et al., 2018). Figure 3.2 depicts the organisational positioning of the RT in both the youth development programme and the professional FT, as this entity may be under the control of leadership from either the YA programme or FT setting.

3.3.4.5 Squad-shifting

The strategy of squad-shifting entails talented players with FT potential to alternate between the RT and FT, often participating in one or more FT sessions during a training week before returning to the RT for competitive matches. One quantitative non-randomized study investigated the impact of injuries on shifting players compared with FT and RT players and surveyed the experiences of these shifting players (Martin-Garetxana et al., 2024). Like the staggered approach, this strategy can be utilized for academy players registered with the RT or

with young players signed to FT contracts by providing them with match play opportunities in official RT matches (i.e., domestic league or domestic cup competitions).

3.3.4.6 Loan move

A loan move can be an alternative talent pathway into the FT, which involves a player's 'parent club' temporarily transferring them to another club (Kent et al., 2022). This organisational strategy, unique to professional soccer, aims to support players' professional development and enhance their career progression by providing more opportunity to train and compete at a lower professional level (Prendergast and Gibson, 2022), with the hope that a successful loan experience will better prepare them for the FT transition back at their parent club (Abbott and Clifford, 2022). Three qualitative studies included in the present MMSR exclusively explored this quasi-normative career transition (Abbott and Clifford, 2022, Kent et al., 2022, Prendergast and Gibson, 2022).

Table 3.7. Overview of qualitative studies.

Study	Methods	Themes	Prominent quotes
Relvas et al. (2010)	Semi-structured interview; Document analysis	Clubs' organisational structures: General club structure, youth development structure; The purpose of a youth development programme; Organisational working mechanism and communication	A perfect situation (for me is) where the FT and the academy they all speak a lot, they all watch players, they all sit down . . . The reality for me, is that will probably never happen because of the demands at the FT level, they really just don't have the time.
Morris et al. (2015)	Semi-structured interview; Document analysis	Two clubs demonstrated good and limited understanding, respectively, of the demands, resources, and barriers that face youth players when they transition to professional FT soccer	We need to try and get the appropriate support in place, and that's everyone, coaches, sport science boys, parents, the player, their friends. We all need to work together to create that support, but if they don't have it, of course it becomes a barrier.
Morris et al. (2016)	Semi-structured interview	A period of adaptation; A corresponding set of characteristics and resources: knowledge, personal characteristics, social support; Developed through a number of preceding transitions	The changes these boys go through are not just moving from the youth team to the FT - there is so much more to it than that. They change teammates, manager, sometimes the position they are playing to suit the team's style of play. But more than that, the culture changes, they now need to perform to the best of their ability every day. If they don't, they are out the door. The pressure on them is immense.
Morris et al. (2017)	Semi-structured interview	Motivation for the transition; Anxiety and confidence; Stressors; Social support	Before moving up, my parents were really important to me, and they still are! But the gaffer is the one I listen to [most] now, he has to be. If I don't listen to him, I'm not going to get picked for the FT am I?
Dowling et al. (2018)	Semi-structured interview	The inbetweeners; Development and winning within elite-level under 21 football; Creating an environment for under 21 development phase	It is a real transient group so out of all the groups within the football club, the under 21s are the ones which is least like a group or least like a team, if you think about my week; so we've just played Childwall United, and coming up from the youth team to help us for that fixture was James Lloyd, Daniel Campbell, Francis Volante, Sean Riley...Shaun Seedy is a first year but has been playing in that group all along. Coming down from the FT, who you never have access to, is Jack Jones, Michael Foster, Luke Murphy. Then in between them all you've got your Closes and your Smiths who are with you on a daily basis. So you've probably got three groups coming together to play a game on one day, so it's not a team.

Table 3.7 Cont. Overview of qualitative studies.

Study	Methods	Themes	Prominent quotes
Røynesdal et al. (2018)	Semi-structured interview	Fitting in with standards of FT environment: Handling social dynamics in the FT, Handling the nature of FT management, Handling the competitiveness in the FT, Facilitating shared perceptions of transition across key stakeholders: Communicating with FT staff, Mentoring and support from coaches at FT players	Every time you are getting on the ball, an established FT player is getting at it. For the effect of the environment, because this is what they will say: ‘fucking hell, any chance of him keeping the ball!?’ If you are getting that, it is a huge pressure to deal with.
Mitchell et al. (2020)	Semi-structured interview	Cultural climate: Fame and wealth, Hierarchy, Isolation, Limited playing opportunities, Harsh environment; Occupational hazards: Injury; Social challenges: Friends/girlfriends, Overpowering parents, Living away from home; Working practices: Lack of post-academy coaching, Increased training intensity	They’re not going to get in the FT; therefore, either they become despondent because they’re not in the FT or, secondly, they’re released because the FT manager wants new players in that are experienced that can actually get a trophy.
Swainston et al. (2020)	Video diary; Semi-structured interview	Academy phase: Pressure of contract decision, Adaptation to senior football; Preparation for the FT; First team phase: FT environment, Opportunity, Coping	It’s a bit demoralizing at times. I know on a Friday I’m going to come and I’m going to be put in any position just to replicate the other team. Positions I never play in. It gets a bit frustrating because you want to play where you play and impress. You can’t, you just have to do what they want you to. It’s a bit annoying at times. The word I think is demoralizing. You lose a lot of confidence in yourself.
Abbott & Clifford (2022)	Semi-structured interview	Physical: Muscular strength, Pitch-based training, Match-play, Increased autonomy for physical condition, Injury; Technical: Technical competence, Individual playing style, Focus of pitch-based training; Tactical: Exposure to different opposition playing styles and formations, Operating within different playing systems, Communication of tactical messages from management team; Psychological: Pressure to perform and win, Self-confidence, Perceived cognitive demand, Mental toughness; Psychosocial: Relationships with senior players, Relationships with management team, Social connections	Playing FT football has definitely developed my ability to do the nasty things associated with football, winning the second balls and headers. Previously I had never really prioritized these within our style of play, so going to a team that did really improve my ability in these tasks

Table 3.7 Cont. Overview of qualitative studies.

Study	Methods	Themes	Prominent quotes
Kent et al. (2022)	Semi-structured interview	Loan demands: Performance demands, Organisational demands; Individual differences: Situational coping, Dispositional coping, Protective factors; Loan resources: Prior to the loan, Resources used during the loan	I was trying to break into the FT but had to prove I can play at the level... if you are going on loan what it that you want to achieve, is it more goals? More confidence? Game time? ... like, what is it? For me, it was to prove to myself that I am ready to play in the FT... it's not just going on loan, you've got a really clear goal
Prendergast & Gibson (2022)	Semi-structured interview	The need for additional experiences for under 23 players; The impact of different socio-cultural environments on player's development; The role of non-league loans in the player's physical development; The perception of non-league football clubs and supporting the player during the loan	No demand on results, it was more about performances. There would be games where we would be up for it, but sometimes you've got a young team and then sometimes you've got older pros that don't really want to be there (under 23s games), and it's just a bit of a weird environment, it wasn't really a winning environment.
Swainston et al. (2022)	Semi-structured interview	Opportunity in first team: Playing time, Training; Performance culture: Men's football, Training standard, FT environment; Organisational strategy: U-23 context, Loan moves; Relationships: Coach relationships, Social dynamics, Teammate support; Power dynamics: Challenge to support; Contracts: Influence on transition; Motivation: Changing motivation; Dual career: Education	You will improve with putting everything into the session and doing everything you have to, but you know that's not going to change the fact that you aren't playing. I would say there are points in the season where I just got through sessions.
McGuigan et al. (2024)	Semi-structured interview	Facilitators of successful youth player transition: Overcoming adversity, Physical prowess, Technical competence, The 'x-factor'; Barriers to successful youth player transition: Opportunity, Player contracts, The "Danger Zone"; Environment and development philosophy: Development approach, Developing individuals - not teams	We have players in the academy squads who are trying to stand out from that crowd, and then trying to battle your way through a 30-man FT squad is a massive ask.

Table 3.8. Overview of quantitative descriptive studies.

Study	Methods	Results and key findings
Chamorro et al. (2016)	Adapted Dual Career Survey (DCS; Stambulova et al. 2015); Passion Scale (Marsh et al. 2013; Vallerand, 2010); Behavioural Regulation in Sport Questionnaire (Viladrich et al. 2011; Lonsdale et al. 2008); Satisfaction of basic psychological needs using Spanish adaptations of: [a] Autonomy satisfaction scale (Standage et al.2005; Alcaraz et al. 2012), [b] Competence satisfaction (McAuley et al. 1989; Balaguer et al. 2008), [c] Relatedness satisfaction (Richer & Vallerand 1998; Balaguer et al. 2008)	Players who perceive equal future importance in their life spheres (i.e., sport, academic study, private life) appear to be more resourceful with internal resources, such as passion and motivation, to cope with the transition to professional soccer
Alves da Silva et al. (2021)	Athlete profile questionnaire; Athletic Coping Skills Inventory-28 (Miranda et al. 2018); Athlete Burnout Questionnaire (Raedeke & Smith 2001; Pires et al. 2006)	Coping was associated with physical and emotional exhaustion in both professional and nonprofessional players, and with a reduced sense of accomplishment only in young nonprofessional athletes who were in the career transition phase
Carpels et al. (2021)	The Football Observatory: 9 longitudinal demographic reports on player transitions and movements across European club soccer	The proportion of club-trained players in senior squads has decreased from 23% to 17% over the time period of 2009 to 2020, while the proportion of expatriates has increased from 35% to 42%. Moreover, clubs resorted more frequently to making new signings, with squad proportion increasing from 37% to 44%, while only launching one debutant on average per season.
Jordana et al. (2023)	The irrational Performance Beliefs Inventory (iPBI-2; Turner & Allen 2018); Sport-Multidimensional Perfectionism Scale-2 (Sport-MPS-2; Gotwals & Dunn 2009); General Health Questionnaire-12 (GHQ-12; Goldberg et al. 1997; Sanchez-Lopez & Dresch 2008); ad-hoc questionnaire concerning key demographics (e.g., age, sports level, academic course), satisfaction with sports performance, academic performance, and based on the Athletic Trajectory Model, their current dedication to soccer and academic studies and their future expectations (in the next 5 years)	The results suggest that the number of juniors who aspire to be professionals (57%) far exceeds the number of players who become professionals. Also, results show that this population presents high levels of demandingness (M = 5.5), low frustration tolerance (M = 5.2), self-organization (M = 5.2) and social functioning (M = 5.5), and low scores on depreciation (M = 2.6) and loss of confidence and self-esteem (M = 2.4). In a more detailed way, the results are compared according to expectancies. These academies are usually environments where success and failure are antagonistic concepts, and where perfectionism and irrational beliefs are normalized and integrated among all members of this context. However, the possible maladaptive effects put their mental health at risk.

Table 3.8 Cont. Overview of quantitative descriptive studies.

Study	Methods	Results and key findings
Lundqvist et al. (2024)	Online survey: Background and demographic information; Strategy and decision making; Demands, barriers, challenges, and coping influencing transition	Training and match intensity were reported as being greater at the senior-level and also pressure from parents. The majority of respondents indicated their clubs having long-term strategy for player development and specific roles supporting successful player transitions. Exposure to different playing styles was deemed important to prepare players for the first team. Likewise, having the academy and the first team training on the same site was perceived to ease the transition, with the majority of respondents indicating that players are able to cope with the pressure of first team training and games. Perceptions on whether staff do not have the skills/resources to prepare players for the changes in environment and culture when players move from youth-to-senior level were unclear.
Mannix et al. (2024)	Online survey: Participant information; General club information; Organisational aims and structure; The preparation for the FT; The process of transition	The predominant aim for both RTs and YAs is to develop players for the FT. The organisational structure and governance of the RTs are varied across the league, but an overarching feature is their function as a development team. When players are transitioning, communication between staff may or may not be clear and effective. Finally, a variety of support strategies are made available during the transition into the FT, but psychological support in particular may be limited or unavailable.

Table 3.9. Overview of quantitative non-randomized studies.

Study	Methods	Results and key findings
Harel et al. (2020)	GPS: total distance (m); Zone 5 distance (5.5-7.0 m/s, m); Zone 6 distance (> 7 m/s, m)	There was no significant difference in total distance between the professional and U-21 players; however, differences were observed between the groups for high speed running distances, including Zone 5 (moderate) and Zone 6 (large).
Houtmeyers et al. (2021)	GPS: total distance (m) and the distances covered at 12-15, 15-20, 20-25, > 25 km/h; external intensity: the distance values divided by the duration in minutes (Gaudino et al. 2015); external load monotony: the weekly mean external load divided by the weekly standard deviation (Foster 1998)	Total distance was higher for U-19 compared to FT-M0 (very likely moderate) and FT-M1 (likely large). Differences at higher velocities were substantially less (trivial to possibly small), with TD >25 km/h being lower than FT-M0 (very likely moderate) and FT-M1 (likely small). All intensity indicators were lower for U-19 (likely small to almost certainly large). Load monotony was higher compared to FT-M1 (possibly small to almost certainly very large). Compared to FTM0, monotony was higher for TD (possibly very large) and TD >25 km/h (possibly moderate) but lower for TD 12-15 (possibly small) and 15-20 km/h (likely moderate).
Craig et al. (2022)	GPS: total distance (m), PlayerLoadTM (au), low intensity running distance (<14.4 km/h, m), running distance (19.8-24.98 km/h, m), sprinting distance (>24.98 km/h, m), accelerations (>2 m/s ² count), decelerations (<-2 m/s ² count); sRPE (Borg CR10)	Point estimates for the development loan players consistently showed lower weekly values than squad players for all variables ranging from 5.2% (weekly sRPE) to 16.8% (weekly sprint distance covered). Differences, however, were not found to be statistically significant ($p \geq 0.07$). Variance ranged from 23.6% (weekly distance) to 37.7% (weekly high-intensity accelerations).
Thoseby et al. (2023)	GPS: total distance (m), high speed distance (>19.8 km/h, m), and peak average acceleration (m/s ²)	Total match running demands were similar between competition levels for all three running demand metrics. Similarly, peak match running demands of TD and HSD were similar between competition levels, with only the peak AveAcc demands being lower in the youth competition across all epoch durations.
Martin-Garetxana et al. (2023)	GPS: total distance (m), distances covered at 14.4-19.8 km/h, >19.8 km/h, >25.2 km/h, number of accelerations >3 m/s ² , number of decelerations <-3 m/s ² ; sRPE (Borg CR10); wellness questionnaire: fatigue, sleep quality, muscle soreness, stress, mood (McLean et al. 2010)	While training together during preseason, ST players performed more decelerations <-3 m/s ² per week than FT players (moderate effect size). For ST players, more total distance (large), accelerations >3 m/s ² (large), and decelerations <-3 m/s ² (very large) were performed; total loading (moderate) and sRPE (moderate) were higher; and fatigue (very large) and stress (moderate) z-scores were worse during the FT preseason compared to their previous ST preseason.

Table 3.9 Cont. Overview of quantitative non-randomized studies.

Study	Methods	Results and key findings
Martin-Garetxana et al. (2024)	Injury incidence (no of injuries/1000 h); Injury burden (no of days lost/1000 h); Training and match exposure (total minutes); Online questionnaire	There were no differences in the overall injury incidence, but the overall burden of injuries was higher in ST (172 days lost/1000 h) and shifting players (194 days lost/1000 h) compared with FT players (114 days lost/1000 h, $p < 0.01$). Shifting players had a higher burden of knee joint/ligament injuries compared with FT players (137 vs. 18 days lost/1000 h, $p < 0.01$) and anterior cruciate ligament (ACL) ruptures (122 vs. 10 days lost/1000 h, $p < 0.01$). Shifting players reported constant pressure and better communication with the second-team coaching staff than with the first-team staff.

3.5 Discussion

The aim of this systematic review was to provide a comprehensive synthesis of the empirical research on the youth-to-senior transition in male professional soccer. While previous reviews have explored the youth-to-senior transition more broadly, this review uniquely integrates both qualitative and quantitative insights from soccer-specific studies. In the subsections that follow, the relevance of organisational structures within professional soccer clubs for transitioning players is explored along with the strategic purpose of loan moves. Next, several factors pertinent to player development during the transition process, including differences in physical demands between the youth and senior levels, the risk of injury, and the relevance of match playing opportunities are examined. Finally, support systems and other critical resources that can be made available by clubs to support players transitioning to FT soccer are considered.

3.5.1 The organisational structures within professional clubs

The organisational structure and culture of a club can significantly influence the youth-to-senior transition process and its outcomes (Drew et al., 2019). Within a modern professional club, the FT and YA operate as distinct entities, each with differing aims and motivations. The FT must prioritize short-term, performance-oriented results, while the YA focuses on long-term player development initiatives. This divergence has yielded both cultural and physical gaps between these two key organisational entities, complicating the coordination needed to manage the youth-to-senior transition process (Relvas et al., 2010).

While the primary aim of a YA programme is to develop future professionals for the FT (Mannix et al., 2024, Relvas et al., 2010), the cultural disconnect, stemming from conflicting strategic purposes and procedures, can undermine relationships and communication networks between the staffs working in these two entities (Relvas et al., 2010). Physical separation between the FT and YA, particularly when based at separate training sites, can hinder young

players' exposure to senior role models, making it more difficult for them to observe and model professional standards (Morris et al., 2015). Academy practitioners have also agreed that having a shared training site can ease this transition process for young players (Lundqvist et al., 2024). However, simply sharing a facility does not guarantee increased interaction or collaboration between FT and YA staffs, as each remains focused on their distinct objectives. Moreover, while there is evidence of documented long-term strategies and management practices for player development within professional clubs (Lundqvist et al., 2024, Morris et al., 2015, Relvas et al., 2010), findings related to internal communication concerning players undergoing the transition process are inconsistent, reflecting a lack of consensus in the peer-reviewed literature.

A key component of the organisational structure within professional clubs is the RT, which serves as an intermediary step, offering transitioning players a development-oriented environment where they can focus on training, competition, and their own professional growth (Mills et al., 2014). However, the strategic positioning and governance of the RT vary by the country and club (Mannix et al., 2024, Relvas et al., 2010). In some European clubs, RTs are managed within the YA structure under the academy director, while in others, they are integrated into the FT and overseen by staff predominantly associated with the FT (Relvas et al., 2010). In MLS, managerial oversight of the RT may be assigned to leadership personnel within the FT, RT, or the YA (Mannix et al., 2024). RT coaches often feel caught between the contrasting cultures of the FT and YA, facing challenges in balancing developmental objectives with the importance of winning matches (Dowling et al., 2018). Additionally, managing a transient group of players with varied developmental needs presents further difficulties, particularly due to the lack of clarity regarding what the *right* environment really is for this unique cohort of players (Dowling et al., 2018).

Recognizing the significance of RTs in the youth-to-senior transition, FIFA has highlighted their role in facilitating the youth-to-senior transition process and supporting long-term player development strategies (FIFA, 2021). To support RTs and help promote future FT players, professional leagues and national governing bodies (NGBs) have established independent development leagues (e.g., Premier League 2, England; Divisie 1, the Netherlands) and have also permitted RTs to compete in lower tier domestic leagues (e.g., 3. Liga, Germany; Segunda División, Spain) (Carpels et al., 2021). Through these initiatives, clubs aim to provide a more cohesive talent pathway into the FT. Beyond RTs, clubs may also use temporary transfers, or loan moves, as an alternative pathway to support player development, a strategy explored in the following subsection.

3.5.2 The role of loan moves for transitioning players

Loaning players is a widely used strategy in professional soccer that can simultaneously benefit both the parent club and the loan club. For the parent club, a loan move can potentially provide their inexperienced young player with increased opportunities to compete in senior level competition, accelerating their development by exposing them to greater physical and tactical demands. The loan club, meanwhile, benefits by temporarily acquiring a promising young talent without the financial burden of a permanent transfer, potentially strengthening their squad depth (Bond et al., 2020).

A major consideration when facilitating a loan move is determining whether the loan club will provide a young player with an appropriate environment that will support their long-term development and help promote further career progression. Parent clubs typically opt for a loan move when they perceive their internal training environments within the YA and RT settings, including the competition programming these entities compete in, to be insufficient in preparing a young player for the physical and psychosocial demands of FT soccer (Prendergast and Gibson, 2022). Most notably though, academy practitioners worldwide have expressed

confidence in the post-academy competition structures in preparing players for FT soccer (Lundqvist et al., 2024).

For loaned players, the transition to another club presents multiple challenges, including adapting to new playing styles, increased match frequency, and reduced recovery time between competitive fixtures (Abbott and Clifford, 2022, Kent et al., 2022). The need to have an immediate impact at the loan club may also place additional stress on young players, who must integrate themselves into a new organisation by adapting to new, more senior teammates and a different coaching philosophy within a limited time frame (Abbott and Clifford, 2022).

Consequently, parent clubs are increasingly providing their players with remote support, employing GPS technology and video analysis to monitor physical development and facilitate performance evaluations, respectively (Kent et al., 2022). Additionally, some clubs have designated loan managers to oversee this remote support and ensure the development and progress of loan players is in alignment with the parent club's objectives (Kent et al., 2022). Overall, this structured approach may help mitigate the risk of loan moves by ensuring that players maintain top physical conditioning, develop their technical skills, and receive appropriate exposure to new tactical demands, including different formations and playing styles (Abbott and Clifford, 2022).

However, the effectiveness of loan moves long-term in fostering the reintegration back into a parent club's FT remains unpredictable. While some players may return better prepared for professional competition with their parent club's FT (Kent et al., 2022, Prendergast and Gibson, 2022), others will still struggle to reintegrate themselves or even face continued loan spells that hinder their stability and development. Therefore, loan moves may not always yield positive developmental outcomes. For example, some players receive limited playing time at their loan clubs, which can further stagnate their development. Furthermore, multiple

consecutive loan moves without a clear reintegration strategy can also disrupt a player's long-term development, creating uncertainty with their future career opportunities within their parent club's FT. Future research should examine the long-term efficacy of loan strategies, particularly their impact on FT integration rates and the psychological well-being of players when they return from a loan move. While a structured approach to managing loan moves is becoming more prevalent within professional soccer, particularly in England, whether undergoing the transition process within the parent club or a loan club, there are several factors that impact players' long-term development, which will be covered in the subsequent subsection.

3.5.3 Closing the physical gap, remaining injury free, and limited playing opportunities

When young players transition to the FT environment, they must adapt to increased physical demands in both training and competition due to the faster speed of play and the physical and physiological advantages of their senior counterparts (Mitchell et al., 2020, Morris et al., 2015, Morris et al., 2016). Within a training week, GPS data has demonstrated that FT players cover significantly greater distance at running velocities above 25 km/h compared to U-19 academy players (Houtmeyers et al., 2021). Similarly, data in matches show FT players perform more high-speed running (≥ 19.8 km/h) and sprinting (≥ 25 km/h) compared to U-21 players (Harel et al., 2020). Additionally, FT players complete more frequent accelerations during matches than U-21 players, further emphasizing the physical gap between youth and senior levels (Thoseby et al., 2023). To address these discrepancies, sport scientists can utilize external load monitoring through GPS to design specific training interventions, ensuring clubs' youth players are progressively exposed to the physical demands required at the FT level, which may improve their chances of a successful transition into the FT (Houtmeyers et al., 2021, Thoseby et al., 2023).

However, the increased physical demands associated with the transition can also increase young players' injury risk, as they may be subjected to abrupt increases in physical loading when integrated into the FT environment (Mitchell et al., 2020). Clubs employing a squad-shifting strategy, where players oscillate between the RT and FT environments, must be cautious as such approaches may heighten injury susceptibility. A study conducted in a Spanish club found that players shifting between teams exhibited a higher incidence of knee joint and ligament injuries compared to FT players, as well as a greater incidence and burden of ACL ruptures compared to players strictly in the RT environment (Martin-Garetxana et al., 2024). Another study conducted in the same club also found that transitioning RT players participating in a FT preseason self-reported higher levels of fatigue and stress compared to their previous preseason in the RT setting, highlighting the physiological and psychological strain of adjusting to increased training loads (Martin-Garetxana et al., 2023). These findings underscore the need for coordinated communication between sports science and medicine staff to implement robust monitoring strategies aimed at mitigating injury risk during the transition period (Martin-Garetxana et al., 2023, Martin-Garetxana et al., 2024).

Beyond physical preparedness, a lack of FT playing opportunities presents a major barrier for transitioning players, which can subsequently impair their confidence and motivation (Swainston et al., 2020, Swainston et al., 2022). Club stakeholders have also raised concerns that many young players can often enter a “danger zone” when they are prematurely integrated into the FT, where they receive neither sufficient match play opportunities nor intensive training due to a condensed match schedule that requires focus and prioritization on recovery and preparation for the next upcoming match (McGuigan et al., 2024). Between 2009 to 2020, young players (i.e., U-21) in top-tier European domestic leagues averaged only ~10 minutes per match, limiting their exposure to competitive environments at the senior level

(Carpels et al., 2021). Concurrently, clubs have shown less inclination to sign and promote academy players, instead opting to sign new, more established professionals to reinforce their FT squads (Carpels et al., 2021). In England, practitioners have cited both the short-term outlook in modern professional soccer and the pressure to win matches as primary reasons why FT managers often favour more experienced, senior players over untested academy graduates (Mitchell et al., 2020).

Compounding the limited playing time, young players integrated into FT environments also face a dearth in effective coaching provision (Mitchell et al., 2020). Some report being underutilized in training, such as replicating opposition tactics in exercises aimed at preparing senior players for the next upcoming match or being excluded altogether during other key parts of a session (Swainston et al., 2022). Future research should examine effective solutions to bridge the physical gap, optimize training methodologies, and enhance the strategic deployment of transitioning players into FT settings to maximize their long-term development.

3.5.4 Support systems and other resources needed for transitioning players

Promising young players can experience a host of internal and external stressors during the youth-to-senior transition (Morris et al., 2017). Internal stressors are related to the high expectations players place on themselves (Morris et al., 2017, Swainston et al., 2022). Before securing a professional contract, academy players have noted experiencing pressure while awaiting on their club's decision (Swainston et al., 2020), as the uncertainty can exacerbate their stress and lead to diminished feelings of accomplishment (Alves da Silva et al., 2021). When invited to train in the FT environment, academy players have also shared unrealistic performance expectations (Morris et al., 2017), highlighting that perfectionism and irrational beliefs held by many young players within a professional YA system have both adaptive and maladaptive implications during the transition process, which threaten their mental health and raises questions concerning the notion of career success in professional soccer (Jordana et al.,

2023). Players with a psychological profile that prioritizes future achievements across sport, academics, and personal life, which is grounded by internal resources, such as passion and motivation, may be crucial in coping with the pressures associated with the youth-to-senior transition in professional soccer (Chamorro et al., 2016). Nevertheless, given the internal stressors inherent in the youth-to-senior transition, clubs should consider employing sport psychologists who can help support talented young players (Mannix et al., 2024), such as providing them with resources that can promote changes in their general psychological wellbeing during this critically demanding period in their careers (Jordana et al., 2023).

External stressors, including pressure from FT staff and teammates, also shape the transition experience (Morris et al., 2016, Røynesdal et al., 2018). While senior players can serve as valuable mentors by offering emotional and technical support (Morris et al., 2017), young players often find it difficult to form relationships due to established social hierarchies within professional soccer clubs (Røynesdal et al., 2018, Swainston et al., 2020). The lack of integration can contribute to feelings of isolation, further complicating the transition process. To better facilitate the integration of young players into the FT, researchers have suggested a implementing a structured mentorship programme, such as a ‘buddy system,’ where academy graduates are paired with experienced FT professionals who provide ongoing support (Morris et al., 2017, Swainston et al., 2020). Given that young players have noted there may be social challenges in building relationships with senior professionals during the transition (Swainston et al., 2020), such programmes may subsequently enable these players to become approved members of the FT culture (Røynesdal et al., 2018).

Other sources of external stress during the transition can include friends, partners, and parents (Mitchell et al., 2020, Morris et al., 2017). Players have highlighted that their parents can become too involved in their careers (Morris et al., 2017), raising concerns on the role parents play in facilitating the psychosocial development of these young professionals

(Mitchell et al., 2020). Players have also cited that their friends can cause them stress (Morris et al., 2017), while coaches have noted that players' social lives, including friends and girlfriends, can be a distraction and negatively influence behaviour (Mitchell et al., 2020). Nevertheless, clubs' YA programmes should prioritise the healthy development of players' psychosocial skills, not only to help them in coping with the transition process, but also further support them in other life domains, such as higher education, personal relationships, and future vocation (Swainston et al., 2020).

3.5.5 Limitations and future research

This MMSR has provided original contributions to the body of research concerning the youth-to-senior transition in professional soccer by examining research trends and providing both a summary and methodological appraisal of included studies. However, there are also limitations to this review, which should be acknowledged. First, one limitation of this review is that the protocol was not pre-registered with the Open Science Framework or a similar registry. Pre-registration helps enhance transparency and reduce the risk of publication bias by ensuring that the methodology is established before data extraction and analysis. While this MMSR followed a rigorous and systematic approach, the absence of a registered protocol means that deviations from the initial methodology were not formally documented, which could be considered a potential source of bias.

Another limitation to consider was the exclusion of female participants in the search strategy. Although there is some existing research investigating the youth-to-senior transition process in female soccer (Gledhill and Harwood, 2015, McGreary et al., 2021), the structural and economic landscape differs significantly from male professional soccer (Valenti et al., 2020). These differences, driven largely by disparities in investment and resources (Thomson et al., 2023), present challenges for direct comparison. As women's professional domestic leagues continue to grow and further professionalize (Culvin, 2023), it is anticipated that clubs'

organisational structures will likely evolve, warranting more comprehensive and comparable investigations in the future.

A third limitation concerns the absence of NT-related data. While there is existing literature investigating the youth-to-senior transition among major federations in Europe (Morganti et al., 2023, Schroepf and Lames, 2018), this review did not incorporate these studies. Their exclusion was, in part, due to the current research landscape, which remains predominantly focused on European soccer ecosystems, limiting broader applicability to other regions in the world with different competition programme structures, talent development pathways, and sporting cultures. Nevertheless, future studies should consider integrating NT-related data to capture the broader dynamics of long-term player development and assess what role the national federations hold in developing future professionals. By combining qualitative and quantitative data from both professional clubs and national federations, researchers can begin to examine this global sport more broadly through a ‘complex systems approach’ (Salmon and McLean, 2020). The adoption a systems thinking lens can lead to a better understanding of the various interacting and interdependent components influencing the youth-to-senior transition process in professional soccer (McLean et al., 2025).

3.6 Conclusion

This MMSR has provided a comprehensive synthesis of the available research on the youth-to-senior transition in male professional soccer, integrating both qualitative and quantitative findings. Additionally, this review has provided original contributions by analysing research trends and conducting methodological appraisal of the included studies. The transition to professional FT soccer represents a complex, multifaceted and dynamic process (Kent et al., 2023), which is influenced by organisational structures, developmental pathways and strategies, physiological and psychological demands, and available player support systems. While professional clubs have implemented various organisational strategies to facilitate the

transition process (Morris et al., 2015, Relvas et al., 2010), such as RTs, loan moves, and squad-shifting, the limited research investigating these approaches to accelerate player development means further scholarly work is warranted. The cultural and performance gaps between the YA and FT environments remain a significant challenge for young players to navigate, as increased physical demands, injury risks, and limited playing opportunities prove to be key barriers for career progression in professional soccer (Dowling et al., 2018, Mitchell et al., 2020, Relvas et al., 2010). Moreover, the importance of psychosocial support is evident, as players must cope with both internal and external stressors during this critical phase of their careers. Other organisational strategies that promote more fluid integration between the YA, RT, and FT entities, individualized player development initiatives, and mentorship programs have the potential to enhance the transition experience for potential young professionals. Moving forward, future research should focus on longitudinal assessments of transition strategies, the role of sport science and medicine practitioners in mitigating injury risks, and the effectiveness of structured psychosocial support mechanisms. Further, researchers should recognize the real-world complexities associated with long-term player development and therefore embrace a complexity science point of view when investigating the youth-to-senior transition process. By addressing these areas and adopting a complex systems approach, clubs can begin to refine their talent development pathways, ultimately improving the transition process and fostering the long-term development of young professional players.

Chapter 4

Surveying Major League Soccer Stakeholders on the Youth-to-Senior Transition

*The following chapter has been published in Science and Medicine in Football (<https://doi.org/10.1080/24733938.2023.2272605>)

4.1 Overview

Chapter four is the first of three empirical studies in this doctoral thesis. The majority of content in this chapter is a published article published online by Taylor and Francis in the peer-reviewed journal, *Science and Medicine in Football*, on 2 November 2023 and is available to readers using the following link: <https://doi.org/10.1080/24733938.2023.2272605>.

4.2 Introduction

A strong domestic league along with a large talent pool of players are key characteristics of established soccer (i.e., association football) nations (Bennett et al., 2019). In the US and Canada, the top-tier domestic league, MLS, has undergone tremendous growth, expanding from 10 to 29 clubs over the course of its 28-year history, subsequently providing unprecedented opportunity for talented young soccer players in North America. Alongside league expansion, MLS organisations have broadened their general club infrastructure and operations, including the construction of soccer-specific stadiums and modern training facilities, and the assemblage of YA and RT, which has significantly augmented the league's talent pathway. In 2007, MLS adopted the globalizing YA system established by leading European soccer clubs when it launched its academy initiative (Bowers and Green, 2016), and a year later, announced its homegrown player initiative, which enabled a new 'player acquisition mechanism' whereby clubs could directly sign an academy player to a professional contract rather than retain him via the MLS SuperDraft (Smolianov et al., 2015). Hence, the concept of a homegrown player has only been instituted in MLS for less than two decades. Despite receiving strategic recommendations to cut spending in youth development (Tenorio and Maurer, 2019), the North American domestic league has continued to finance its talent pathway in an effort to keep up with the ever-increasing globalisation, professionalism, and investment in elite soccer. To date, much of the player development research in elite soccer has originated from British and European contexts, which are home to the sport's hegemonic

domestic leagues, but this global sport has been on the rise in North America and MLS aims to become a much stronger domestic league, as well as a major force in the transfer market (Stejskal, 2019). Consequently, there is a need to generate more knowledge about the structural complexities and cultural nuances of player development in North American soccer.

4.2.1 The youth-to-senior transition

In professional soccer, the transition from the youth to senior level is considered one of the defining moments of a player's career (FIFA, 2021). This within-career transition has been described as a turbulent time where players encounter athletic, social, psychological, psychosocial, and sociocultural stressors both on and off the field (Drew et al., 2019, Egilsson and Dolles, 2017, Stambulova et al., 2009). An empirical youth-to-senior transition model outlines the sequence and time course of the transition period into four discrete phases: preparation, orientation, adaptation, and stabilization (Stambulova et al., 2017). In the model's temporal structure, the components of the transition process (i.e., demands, resources, barriers, coping strategies, and outcomes) and their dynamics within each phase are included. While career transition phases and processes have been examined from a variety of perspectives in professional soccer (Morris et al., 2017, Morris et al., 2015, Morris et al., 2016), these investigations have been conducted solely in a British context, limiting the scope of this research area and failing to account for sociocultural differences that may impact players' transition experiences and outcomes (Drew et al., 2019).

The preparation phase is an academy player's physical and mental preparation for a full-time move to the senior level following opportunities to train with the FT and experience the professional setting (Pehrson et al., 2017, Swainston et al., 2022). Typically, clubs utilize a 'staggered entry system,' giving young players a gradual introduction to the professional environment and allowing them to integrate with senior players and staff (Morris et al., 2015). Academy players are often promoted because either a professional player is injured and a

replacement is needed for training purposes, or FT technical staff have observed a young player and subsequently invited him to train with the FT (Røynesdal et al., 2018). After exiting the academy and signing a professional contract, a young player moves full-time into the professional environment to begin the orientation phase where they learn more about the demands of the new environment and become accustomed to the FT and its organisational structure and culture (Swainston et al., 2020). In the adaptation phase, players continue to learn and adapt to the FT environment, pushing for a bigger role in the roster, while in the stabilization phase that follows, a player will have cemented their place as a regular in the FT (Pehrson et al., 2017, Swainston et al., 2020).

The present study is concerned with determining the state of player development in MLS, particularly during the first three transition phases, as the successful management of a young player's transition from academy to FT is still a major challenge that faces all professional clubs (Mitchell et al., 2020). At an organisational level, player development encompasses strategic, operational, and financial planning contributions from multiple stakeholders with different levels of expertise, including sports science and medicine, coaching, talent identification, and management (Sotiriadou and Shilbury, 2012). Exiting the academy and signing a professional contract commences a new, critical phase of player development often referred to as the 'post-academy phase' or 'developing mastery phase' (Richardson et al., 2012). Adapted from Wylleman and Lavallee (2003), this soccer-specific model encapsulates the ambiguity that players encounter as they progress through a club's organisational structure and culture. Concomitantly, young players may not be fully prepared for the FT and still require further development, such as opportunities for routine intensive training and regular match exposure (Richardson et al., 2012, Webb et al., 2020). To better support transitioning players' development, many professional clubs across the globe have RTs, also referred to as second teams or B teams, that compete in lower-tier leagues (e.g., 3

Bundesliga, Germany) or independent developmental leagues (e.g., Premier League 2, England). Thus, the RT acts as a conduit between the YA and FT (Dowling et al., 2018), giving young players a supportive yet challenging environment where they can continue their development after graduating from the academy (Relvas et al., 2010). Further, for many young, contracted FT players, the RT also offers opportunities for regular match play, as playing time in the FT may often be limited (Swainston et al., 2022).

4.2.2 MLS reserve teams

The evolution of RTs in MLS has been complicated in part due to recurring changes in the US divisional structure below MLS, creating a complex professional soccer landscape (Warren and Agyemang, 2018). Previously, MLS had two independent reserve leagues that commenced in 2005 and 2011, but they failed to provide developing players with the required number of competitive fixtures due to the limited 12-match summer schedule (Rueter, 2020). From 2014 to 2022, various MLS clubs either consistently or sporadically operated independent RTs, or partnered with affiliate clubs, that competed in the second- and third-tier domestic leagues run by USL. In 2022, however, MLS launched its third iteration of a reserve league, MLSNP, which ultimately led to an exodus of MLS' independent RTs from USL. Consequently, RT operations for most MLS clubs have been in a constant state of flux, creating both a paucity of organisational stability and strategic consistency, which has impeded the clubs' abilities to establish and maintain a cohesive talent pathway. This complicated evolution has made it difficult, if not impossible, to longitudinally evaluate MLS' talent pathway, which has ultimately impacted the youth-to-senior transition process.

In light of the previous literature and North American professional soccer context, the purpose of this study was to survey MLS stakeholders' attitudes and perspectives on the youth-to-senior transition with a particular interest in clubs' evolving organisational structures, including the RT and YA entities. By surveying a variety of MLS stakeholders directly involved

in player development initiatives, this study will provide critical insights on organisational aims and structure within MLS clubs [1], the capabilities of club entities (i.e., RT and YA) to prepare players for the FT [2], and the overall transition process within MLS [3].

4.3 Methods

4.3.1 Participants

A total of 80 participants working in professional soccer in both Canada and the US voluntarily completed an online survey. Participants were recruited using a poster advertised on LinkedIn and through the principal investigator's network of professional contacts. To increase visibility, 'snowball sampling' was implemented (Morgan, 2012), whereby participants were encouraged to circulate the poster amongst their colleagues within their club and across the league. The survey was first made available on 1 June 2022 and remained open for approximately 9 weeks. Inclusion criteria defined participants as working full-time in a 'player operations' role at either the FT, RT, or YA level within a first division professional soccer club in either Canada or the US at the time of data collection. The 'player operations' categories included were administration/operations, coaching/technical, executive/management, sports analytics, sports medicine, sports science/strength and conditioning (S&C), and talent identification/recruitment. All participants were able to view and download the participant information sheet on the first page of the survey and were advised that by taking part their informed consent was given. To ensure that responses were collected from the targeted population, inclusion criteria were provided on the first page of the survey. Participant information including age, gender, and club identifiers was not requested to ensure responses remained confidential. The study received full ethical approval from an institutional ethics committee (22/SPS/030).

4.3.2 Survey design and distribution

Online software (SurveyMonkey, California, USA) was used to create a survey about topics concerning the youth-to-senior transition in MLS. The survey was adapted from a previous transition survey investigating the Premier League 2 (Division 1/2). Questions were either omitted or altered to suit the North American soccer landscape. Additional lines of questioning were developed by the lead researcher and were based on experience and relevant literature (Chamorro et al., 2019, Morris and Deason, 2020). The question types were either multiple choice, simple multiple choice (yes/no), checkbox, numerical, ranking, or matrix/rating scale. Operating as a Likert scale, each matrix/rating scale contained five points with all points labelled with anchors (Vagias, 2006), as fully labelled scales are more reliable and valid than partially labelled scales (Krosnick and Presser, 2010). The main topics within the survey concerned participant information, general club information, organisational structure, the process of transition, and preparation for the FT (Table 4.1). The survey was reviewed for content validity via three rounds of group discussion among the research team (Stoszkowski and Collins, 2016). Next, the principal investigator conducted pilot testing via discussions with 11 ‘player operations’ personnel working in MLS, including five coaches, one academy director, two performance analysts, one head of sports science, one performance director, and one team administrator. This resulted in the modification of several questions (n = 10) to improve clarity and comprehension, including questions on operational aims being altered from a Likert scale to a ranking list. Next, a multiple-choice question concerning respondents’ opinions on operational aims within their club was added. Also, Likert scale questions under the subtopic, competition programmes, that concerned intra- and inter-league loans and youth-level competitions were separated to give the survey a clearer structure. The final survey consisted of 39 questions and took approximately 20 minutes to complete.

Table 4.1. Survey outline, including the main topics, subtopics and the number of questions.

Main topic	Subtopic	Number of questions
Participant information		4
General club information		4-5
Organisational structure	Reserve team	3
	Operational aims	4
	Club facility site(s)	3-5
The process of transition	The process	1
	Decision makers	4
	Reasons for promotion	1
	Frequency of player transitions	3
	Individualized support	2-3
Preparation for the first team	Reserve team environment	1
	Youth academy environment	1
	Competition programmes	4

4.3.3 Data reduction and analysis

Survey responses were exported into Microsoft Excel (Version 2310, Microsoft, Redmond, WA, USA) and subsequently SPSS (Version 26, IBM, New York, NY) for further analysis. Frequency analysis was conducted for each question. Content analysis was also performed for a single question pertaining to *reasons for promotion*, in which participants could submit a maximum of five responses. Results for multiple choice and simple multiple choice were presented as absolute frequency counts or percentage of respondents. The percentage of responses was assigned the following qualitative terms: All = 100% of respondents; Most = $\geq 75\%$; Majority = 55 to 75%; Approximately half = $\pm 50\%$; Approximately a third = $\pm 30\%$; Minority = $< 30\%$ (Starling and Lambert, 2018). Likert scale responses were converted to integers and represented by the qualitative anchor associated with the mean response. Likert scale responses are presented as the response label associated with the mean response expressed as an integer, and also as the Mean $\pm$ SD. Answers to Likert scales pertaining to the level of agreeability were grouped as Agree (Strongly agree and Agree), Neither Agree nor Disagree, and Disagree (Strongly disagree and Disagree). Numerical responses are presented as Mean $\pm$ SD.

4.4 Results

4.4.1 Participant demographics

A total of 80 respondents completed the survey (Administration/Operations: $n = 5$, 6.4 ± 5.7 years' experience; Coaching/Technical: $n = 27$, 12.2 ± 8.0 ; Executive/Management: $n = 5$, 15.2 ± 6.1 ; Sports Analytics: $n = 3$, 3.7 ± 0.6 ; Sports Medicine: $n = 17$, 5.4 ± 6.2 ; Sports Science: $n = 20$, 6.5 ± 4.0 ; Talent Identification/Recruitment: $n = 3$, 15.7 ± 6.7 . Of these respondents, 35 worked in the FT, 21 in the RT, and 24 in the YA (Table 4.2). Most respondents worked for a club that operated a RT in the new third division league, MLSNP (84%), while the remaining (16%) respondents worked for a club that still operated a RT in the second division league, USL Championship. The survey had an equal distribution between MLS' geographical conferences (i.e., Eastern and Western Conferences).

Table 4.2. Proportion of stakeholder respondents by club level and 'player operations' role.

Player Operations Role	First Team	Reserve Team	Youth Academy	Total
Administration/Operations	0	1	4	5
Coaching/Technical	8	9	10	27
Executive/Management	4	0	1	5
Sports Analytics	1	1	1	3
Sports Medicine	8	6	3	17
Sports Science/Strength & Conditioning	13	4	3	20
Talent Identification/Recruitment	1	0	2	3
Total	35 (44%)	21 (26%)	24 (30%)	80

4.4.2 Organisational aims

Tables 4.3 and 4.4 present the organisational aims of the RT and YA, respectively, while tables 4.5 and 4.6 present respondents views on whether each organisational aim is successfully being met.

Table 4.3. Proportion of responses concerning the organisational aims of operating a reserve team.

	<i>Rank</i>			
	1	2	3	4
At your club, the aim of operating the reserve team is to:				
Develop players for the club's first team	65 (81.3%)	14 (17.5%)	0 (0.0%)	1 (1.3%)
Develop players to be sold for financial gain	6 (7.5%)	32 (40%)	23 (28.7%)	19 (23.8%)
Develop players to have a career in professional soccer	8 (10%)	27 (33.8%)	32 (40%)	13 (16.3%)
Develop players for the national team	1 (1.3%)	7 (8.8%)	25 (31.3%)	47 (58.8%)

Table 4. 4. Proportion of responses concerning the organisational aims of operating a youth academy.

	<i>Rank</i>				
	1	2	3	4	5
At your club, the aim of operating the youth academy is to:					
Develop players for the club's first team	58 (72.5%)	15 (18.8%)	5 (6.3%)	1 (1.3%)	1 (1.3%)
Develop players to be sold for financial gain	9 (11.3%)	19 (23.8%)	16 (20%)	19 (23.8%)	17 (21.3%)
Develop players to have a career in professional soccer	9 (11.3%)	23 (28.7%)	25 (31.3%)	18 (22.5%)	5 (6.3%)
Develop players for the national team	0 (0%)	10 (12.5%)	14 (17.5%)	31 (38.8%)	25 (31.3%)
Develop players to compete in U.S. collegiate soccer	4 (5%)	13 (16.3%)	20 (25%)	11 (13.8%)	32 (40%)

Table 4.5. Proportion of responses concerning stakeholders' views on whether the reserve team is meeting each player development aim listed.

	<i>Reserve team</i>		
	Yes	No	Unsure
In your opinion, do you believe your club's reserve team is successfully meeting each player development aim listed?			
Develop players for the club's first team	54 (68%)	13 (32%)	13 (32%)
Develop players to be sold for financial gain	21 (26%)	35 (44%)	24 (30%)
Develop players to have a career in professional soccer	60 (75%)	8 (10%)	12 (15%)
Develop players for the national team	35 (44%)	21 (26%)	24 (30%)

Table 4. 6. Proportion of responses concerning stakeholders' views on whether the youth academy is meeting each player development aim listed.

	<i>Youth academy</i>		
	Yes	No	Unsure
In your opinion, do you believe your club's youth academy is successfully meeting each player development aim listed?			
Develop players for the club's first team	52 (65%)	16 (20%)	12 (15%)
Develop players to be sold for financial gain	25 (31%)	29 (36%)	26 (33%)
Develop players to have a career in professional soccer	57 (71%)	12 (15%)	11 (14%)
Develop players for the national team	41 (51%)	16 (20%)	23 (29%)
Develop players to compete in U.S. collegiate soccer	73 (91%)	1 (1%)	6 (8%)

4.4.3 Organisational structure

4.4.3.1 Reserve team dynamics

A majority of respondents described the function of the RT as being a development team within their club (64%). Next, over a third of respondents reported that the RT head coach (39%) governed, or oversaw and managed, the environment, while 22 respondents reported the academy director (28%), and 13 respondents reported the FT head coach (16%) held management authority. Other respondents (15%) reported a RT general manager oversaw this entity within the club, or that a collaboration in governance existed between the FT, RT, and YA leadership. Also, a majority of respondents indicated that players and staff from the RT worked equally with the FT and YA on a daily basis (66%), while two minorities noted that the RT either worked primarily with the FT (14%) or YA (16%) within their club. Three (4%) respondents reported very little interaction existed between the RT and the other entities within their club.

4.4.3.2 Training site(s)

A majority (72%) of respondents reported that their club had training facilities located on a single site. The remaining twenty-three (28%) respondents reported that their club had facilities that were geographically located on separate sites. Subsequently in the survey, 11

(14%) respondents reported that their club's FT and RT shared a training site separate from the YA (20.5 ± 9.2 miles apart), 10 (13%) respondents reported the RT and YA shared a training site separate from the FT (23.1 ± 6.0 miles apart), and two (3%) respondents reported all three club entities trained on separate sites.

4.4.4 Transition process

Table 4.7 presents stakeholder responses concerning the transition process to the FT. In determining whether players transition from the RT to the FT, and from the YA to the RT, a variety of club personnel with varying levels of influence are involved in the decision-making process, which is presented in table 4.8. The frequency of these transitions is presented in table 4.9 and the bespoke support strategies available to players while transitioning to the FT within MLS organisations are presented in figure 4.1. Also, a variety of free text responses ($n = 270$) concerning the rationale for promoting players to the FT were provided. Table 4.10 presents a summary of the categories and sub-categories, while additional analysis is also provided for each category generated.

Table 4. 7. Mean ($\pm$ SD) level of agreeability amongst stakeholders concerning the transition process to the first team.

<i>Stakeholder answer (Mean $\pm$ SD)</i>	
For the following statements, please indicate your level of agreement to the listed answers with regards to the process of players transitioning to the first team at your club:	
There is a clearly defined "pathway" at your club for reserve team/youth academy players to progress to the first team	Agree (4.2 ± 0.9)
Young players are given a lot of opportunities to progress into the first team at your club	Agree (3.7 ± 1.0)
There is always regular and effective communication between relevant staff about the performance and development of specific players	Agree (3.7 ± 1.1)
First team staff actively take an interest in the reserve team and youth academy	Agree (3.7 ± 1.2)
There is a well-documented "pathway" at your club with written down development strategies and management practices	Agree (3.5 ± 1.1)
When players are transitioning, communication between relevant staff is always clear and effective	Neither agree nor disagree (3.3 ± 1.2)

Table 4. 8. Proportion of stakeholders' responses on who the decision-makers are in the transition process. Mean ($\pm$ SD) stakeholder responses on the level of influence each decision-maker has in the decision-making process concerning players transitioning from the reserve team to the first team and the youth academy to the reserve team.

	Reserve Team to First Team			Youth Academy to Reserve Team		
	<i>Involved</i>		<i>Level of influence</i> (Mean ± SD)	<i>Involved</i>		<i>Level of influence</i> (Mean ± SD)
	Yes	No		Yes	No	
a) Who is involved in the transition process?						
b) What is their level of influence in this decision-making process?						
Sporting Director	75 (94%)	5 (6%)	Very influential (4.4 ± 0.8)	53 (66%)	27 (34%)	Very influential (4.2 ± 0.8)
FT Head Coach	79 (99%)	1 (1%)	Extremely influential (4.5 ± 0.8)	25 (31%)	55 (69%)	Very influential (3.9 ± 1.1)
FT Assistant Coaching Staff	75 (94%)	5 (6%)	Very influential (3.7 ± 0.9)	24 (30%)	56 (70%)	Somewhat influential (3.0 ± 1.0)
RT Head Coach	77 (96%)	3 (4%)	Very influential (3.5 ± 0.8)	80 (100%)	0 (0%)	Very influential (4.3 ± 0.9)
RT Assistant Coaching Staff	54 (67.5%)	26 (32.5%)	Somewhat influential (2.8 ± 0.7)	70 (87.5%)	10 (12.5%)	Very influential (3.6 ± 0.9)
Academy Director	54 (67.5%)	26 (32.5%)	Very influential (3.5 ± 0.9)	74 (92.5%)	6 (7.5%)	Very influential (4.3 ± 0.9)
Academy Coaching Staff				70 (87.5%)	10 (12.5%)	Very influential (3.9 ± 0.9)
Director of Sports Analytics	19 (24%)	61 (76%)	Somewhat influential (3.0 ± 0.9)	12 (15%)	68 (85%)	Somewhat influential (2.9 ± 0.8)
Director of Sports Medicine	21 (26%)	59 (74%)	Somewhat influential (2.7 ± 0.9)	11 (14%)	69 (86%)	Somewhat influential (3.1 ± 0.9)
Director of Sports Science	33 (41%)	47 (59%)	Somewhat influential (3.4 ± 1.0)	17 (21%)	63 (79%)	Very influential (3.5 ± 0.8)
Director of Talent Identification	43 (54%)	37 (46%)	Somewhat influential (2.7 ± 0.8)	41 (51%)	39 (49%)	Somewhat influential (2.8 ± 0.9)
Other Staff (RT/YA)	17 (21%)	63 (79%)	Somewhat influential (2.8 ± 1.0)	23 (29%)	57 (71%)	Somewhat influential (3.1 ± 0.8)

Table 4.9. Mean ($\pm$ SD) stakeholder responses concerning the frequency of player transitions.

	<i>Stakeholder answer (Mean $\pm$ SD)</i>
How often do reserve team players transition into the first team at your club?	Frequently (2.7 $\pm$ 1.6)
How often do youth academy players transition into the reserve team at your club?	Very frequently (2.0 $\pm$ 1.1)
How often do youth academy players transition into the first team at your club?	Occasionally (4.9 $\pm$ 1.2)

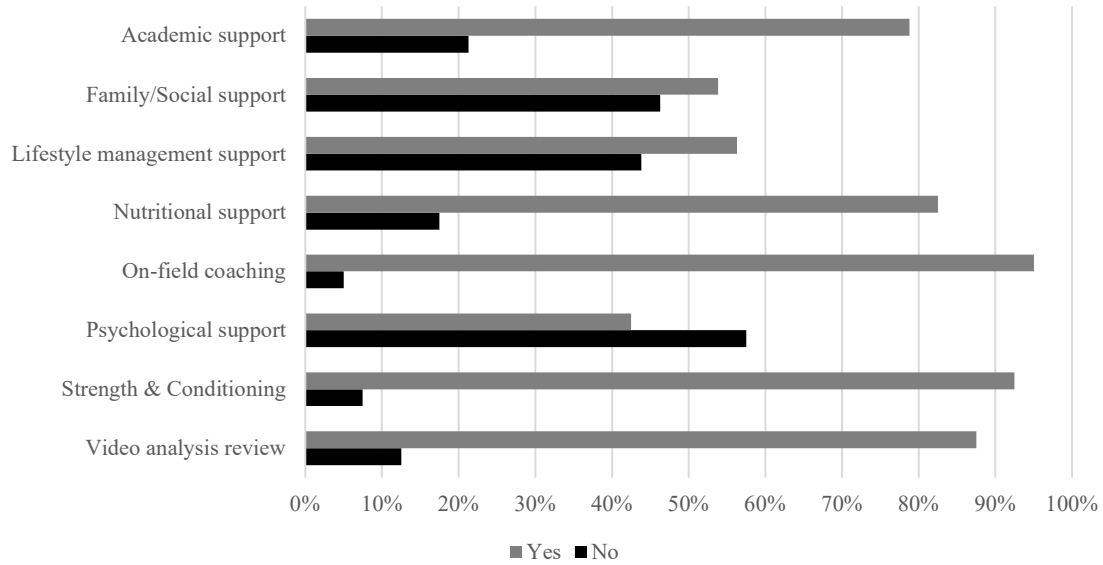


Figure 4.1. Percentage (%) of responses concerning bespoke support strategies available to young players when transitioning to the first team.

Table 4.10. Categories and sub-categories concerning the rationale for promoting players to the first team.

Categories	Sub-categories	Count (%)
Performance Evaluation	Ability	61 (23%)
	Club game model	
	National team selection	
	Talent identification	
	Training and match play	
First Team Needs	General practice	57 (21%)
	Injury	
	Roster depth	
	Training	
Individual Qualities	Chronological age	47 (17%)
	Physical	
	Psychosocial	
	Tactical	
	Technical	
Perceptions of Talent	Career projection	44 (16%)
	Deemed high potential	
	Player forecasting	
	Talent labelling	
Development Purposes	Competition level	34 (13%)
	Environment	
	Opportunity	
	Overall development	
Business Practices	Agents	27 (10%)
	Homegrown status	
	Investments	
	Player migration	
	Transfer market	

4.4.4.1 Performance evaluation

Several informal processes exist when performance evaluations are conducted within MLS clubs. For example, observation of player performances within training and match play for the RT were reported by multiple respondents as a means of evaluating and determining whether a player is ready to be promoted to the FT. Also, respondents noted that players who fit the club's game model could be promoted. Others simply commented that players' current ability, or selection for a youth NT programme, were grounds for promotion.

4.4.4.2 First team needs

The needs of the FT were reported as a rationale for player promotions. For example, respondents indicated that players are promoted when there is a need for increased player numbers for upcoming training sessions, particularly when there are injuries within the FT. As one respondent noted, "players often train with the FT when injuries occur." Additionally, players may be promoted because there is depth needed in the FT roster.

4.4.4.3 Individual qualities

Physical, psychosocial, tactical, and technical qualities demonstrated by individual players were submitted by respondents as reasoning for promotion. For example, the following psychosocial qualities, including attitude, character, coachability, mentality, and work ethic were shared as reasons for why players were promoted to the FT. Physical qualities, such as athleticism, maturation, and conditioning were also submitted by respondents.

4.4.4.4 Talent predictors

Several respondents indicated that players are promoted to the FT because they possess "talent," or "potential." Respondents commented that predictor outcomes either expressed individually or shared amongst staff were considered sound rationale for promoting players. For example, one respondent stated that a player is promoted because "he will soon have the

ability to play at that level” while another wrote, “we as a staff feel he is ready for the jump physically and technically.”

4.4.4.5 Development purposes

Players were promoted to the FT as a means of accelerating their development by exposing them to a new environment and a higher competition level. For example, one respondent wrote that the purpose of promoting a player to the FT was to expose them to “a new environment and see how they adapt.” Further, the opportunity to undergo further development was also cited by several respondents with one respondent, in particular, who wrote, “we are able to see an opportunity for him to grow and thrive.”

4.4.4.6 Business practices

Various business practices may serve as a rationale for promoting players to the FT. Respondents reported that players were promoted because of “agent relations” or because they were homegrown talents. One respondent wrote that their club “places a large emphasis on homegrown contracts.” Other respondents reported that promotion to the FT was a means for clubs to protect their investment and interest in a certain player, or because the club recognized an opportunity in the future to sell a player in the transfer market.

4.4.5 Preparation for the first team

4.3.5.1 Reserve team and youth academy environments

Tables 4.11 and 4.12 present stakeholder responses concerning the capabilities of the RT and YA environments, respectively, to prepare players for the FT.

4.3.5.2 Competition programmes and player loans

Tables 4.13 presents stakeholder responses on the capabilities of various professional and youth competition programmes (i.e., under-20 age category) to prepare players for FT soccer in MLS. Likewise, table 4.14 presents responses concerning the capabilities of the loan system to prepare players for MLS. Tables 4.15 and 4.16 present responses concerning the

capabilities of certain global, regional, and domestic youth competitions in preparing players for second division and third division soccer in North America, respectively.

Table 4.11. Mean ($\pm$ SD) level of agreeability amongst stakeholders concerning the capabilities of the reserve team environment in preparing players for the first team.

<i>Stakeholder answer (Mean $\pm$ SD)</i>	
For the following statements concerning your club's reserve team, please indicate your level of agreement to each answer:	
Reserve team staff are aware of and understand the demands of the first team environment	Agree (4.1 $\pm$ 0.9)
The reserve team prepares players physically for first team soccer	Agree (3.9 $\pm$ 0.9)
The reserve team prepares players technically for first team soccer	Agree (3.8 $\pm$ 0.9)
The reserve team prepares players for first team soccer	Agree (3.7 $\pm$ 0.9)
The reserve team prepares players tactically for first team soccer	Agree (3.7 $\pm$ 1.0)
Reserve team players are aware of and understand the demands of the first team environment	Agree (3.6 $\pm$ 1.0)
The reserve team prepares players mentally for first team soccer	Neither agree nor disagree (3.4 $\pm$ 0.9)

Table 4.12. Mean ($\pm$ SD) level of agreeability amongst stakeholders concerning the capabilities of the youth academy environment in preparing players for the first team.

<i>Stakeholder answer (Mean $\pm$ SD)</i>	
For the following statements concerning your club's youth academy, please indicate your level of agreement to each answer:	
The academy prepares players technically for first team soccer	Agree (3.8 $\pm$ 0.8)
The academy prepares players tactically for first team soccer	Agree (3.8 $\pm$ 0.9)
Academy staff are aware of and understand the demands of the first team environment	Agree (3.8 $\pm$ 1.0)
The academy prepares players for first team soccer	Agree (3.5 $\pm$ 0.9)
The academy prepares players physically for first team soccer	Neither agree nor disagree (3.3 $\pm$ 1.0)
The academy prepares players mentally for first team soccer	Neither agree nor disagree (3.2 $\pm$ 1.1)
Academy players are aware of and understand the demands of the first team environment	Neither agree nor disagree (3.2 $\pm$ 1.0)

Table 4.13. Mean ($\pm$ SD) level of agreeability amongst stakeholders on whether these specific competition programmes prepare players for first team soccer.

<i>Stakeholder answer (Mean $\pm$ SD)</i>	
For the following statements, please indicate your level of agreement to each answer:	
The FIFA U-20 World Cup prepares players for first team soccer in MLS	Agree (3.8 $\pm$ 0.7)
Confederation U-20 World Cup Qualifiers prepares players for first team soccer in MLS	Agree (3.6 $\pm$ 0.8)
USL Championship prepares players for first team soccer in MLS	Agree (3.8 $\pm$ 0.9)
MLS Next Pro prepares players for first team soccer in MLS	Neither agree nor disagree (3.3 $\pm$ 1.0)
USL League One prepares players for first team soccer in MLS	Neither agree nor disagree (3.0 $\pm$ 0.9)

Table 4.14. Mean ($\pm$ SD) level of agreeability amongst stakeholders on whether loans prepare players for first team soccer.

<i>Stakeholder answer (Mean $\pm$ SD)</i>	
For the following statements, please indicate your level of agreement to each answer:	
Intra-league loans prepare players for first team soccer in MLS	Agree (4.0 $\pm$ 0.7)
Inter-league loans prepare players for first team soccer in MLS	Agree (3.9 $\pm$ 0.7)

Table 4.15. Mean ($\pm$ SD) level of agreeability amongst stakeholders on whether these specific youth competition programmes prepare players for second division professional soccer.

<i>Stakeholder answer (Mean $\pm$ SD)</i>	
For the following statements, please indicate your level of agreement to each answer:	
MLS Next prepares players for second division professional soccer	Agree (3.8 $\pm$ 0.6)
The FIFA U-17 World Cup prepares players for second division professional soccer	Agree (3.8 $\pm$ 0.8)
Confederation U-17 World Cup Qualifiers prepares players for second division professional soccer	Agree (3.7 $\pm$ 0.8)
Generation Adidas Cup prepares players for second division professional soccer	Agree (3.6 $\pm$ 0.6)

Table 4.16. Mean ($\pm$ SD) level of agreeability amongst stakeholders on whether these specific youth competition programmes prepare players for third division professional soccer.

<i>Stakeholder answer (Mean $\pm$ SD)</i>	
For the following statements, please indicate your level of agreement to each answer:	
MLS Next prepares players for third division professional soccer	Agree (3.9 $\pm$ 0.7)
Generation Adidas Cup prepares players for third division professional soccer	Agree (3.8 $\pm$ 0.9)
The FIFA U-17 World Cup prepares players for third division professional soccer	Agree (3.9 $\pm$ 0.8)
Confederation U-17 World Cup Qualifiers prepares players for third division professional soccer	Agree (3.9 $\pm$ 0.8)

4.5 Discussion

4.5.1 Organisational aims

MLS stakeholders reported that the predominant aim for both the RT and YA is to develop players for the FT (see Tables 2 and 3). To the best of these author's knowledge, these findings are the first to confirm the homogenisation of organisational aims in MLS relative to European soccer (Relvas et al., 2010, Stratton, 2004), and with the rest of the soccer world in general (Ford et al., 2020). Consequently, MLS may now indeed be embracing a long-term strategy in which its clubs utilize their YAs and RTs to develop young potential talents for the FT. In the US, MLS became the first professional sports organisation to actively engage in youth development (Cocco and Spencer, 2019), which has subsequently provided a more defined talent development pathway into elite sport in North America. Though, MLS may be motivated to do so because of the viable financial rewards of selling players in the global transfer market, which is a labour market system unique to elite soccer (Liu et al., 2016).

The lowest ranked aims for the RT and YA were the development of players for the national team and the US collegiate system, respectively (see Tables 2 and 3). MLS is an unconventional domestic league, operating across Canada-US borders, and these findings indicate that neither Canadian nor US clubs may be compelled to develop players for their respective national federations. Like previous research conducted in Europe, only professional clubs in Sweden have reported prioritizing player development for the national team (Relvas et al., 2010). Finally, although collegiate athletics has historically been a key component of the talent pathway for various US sports systems (e.g., American football and basketball) (Green et al., 2013), male professional soccer in the US may be becoming less reliant on the collegiate system for player development purposes since adopting the European club model. Consequently, the primary aim for MLS youth academies, like other academies around the

world (Ford et al., 2020), is to develop professional soccer players rather than student-athletes for collegiate soccer programmes.

4.5.2 Function, governance, and structure of reserve teams

A majority of respondents described the function of the RT as being a development team within their club. Thus, an RT within MLS is a critical entity where young players may undergo the ‘developing mastery phase’ (Littlewood et al., 2019), as it strategically provides them with an environment that closely replicates the FT (Dowling et al., 2018), but where they can continue to develop and prepare for the demands of first-division soccer. Next, stakeholders reported that leadership personnel from either the academy, RT, or FT oversee the management of the RT environment. Interestingly, a few stakeholders also noted the role of a specific RT general manager that oversees the environment. The authors of this study are unaware of any formal mandates set by the MLS front office concerning a standardized organisational structure for its clubs. In British and European soccer, however, the RT is typically managed by either the youth or professional FT entity and together these two entities are typically based in a shared facility (Dowling et al., 2018, Relvas et al., 2010).

4.5.3 Training site location(s)

While a majority of stakeholders reported that all three entities trained at a single location, some MLS organisations have their club entities in different geographical locations. Physical distances between training facilities have previously been reported, which may be due to a predetermined club strategy (Relvas et al., 2010), but a recent global transition survey reported that having the academy and FT on the same training site eases the transition process for young players (Lundqvist et al., 2024). Club infrastructure that holds both youth and senior players in the same training facility can provide the former an opportunity to observe and emulate their role models (Aalberg and Saether, 2016). However, while hosting youth and professional players together in a single facility may be a suitable strategy for player transition

purposes, there still exists this cultural distance that can wedge a gap in the organisational practices and communication between the youth and professional entities (Aalberg and Saether, 2016, Relvas et al., 2010).

4.5.4 Within-club communication

Clear lines of communication within elite sport are critical to executing working practices and fulfilling a club's organisational aims (Dijkstra et al., 2014, Nesti et al., 2012). However, MLS stakeholders reported that communication concerning transitioning players may or may not be clear and effective. Poor communication between the FT, RT, and YA staff across administration, technical, sport science, and medicine departments may impede a young player's progression to the senior level (Relvas et al., 2010). In modern football, large volumes of data are being collected daily by sports science and medicine practitioners, which has been driven in part by the widespread application of technologies such as wearable devices and Athlete Management Systems (AMS) (Gamble et al., 2020). The production of large datasets, coupled with an inability by practitioners to effectively deliver feedback on training- and match-related information to technical staff can render an ineffective monitoring process and be a missed opportunity for effective knowledge translation (Bartlett and Drust, 2021, Nosek et al., 2021). Further, incoherent communication lines between staff can inflate injury rates (Ekstrand et al., 2019, Larruskain et al., 2022), and deter player needs satisfaction (Li et al., 2017). Evidence of transdisciplinary dialogue concerning optimal player development strategies also remains limited) (Figueiredo et al., 2014). Although, a recent global survey indicated that strategic alignment among performance and medical practitioners exists between the professional and youth environments within professional clubs and national federations (Gregson et al., 2022). Nonetheless, future research should investigate the quality of communication lines and working practices between practitioners within the three different

club environments to determine the state of player development strategies for transitioning players.

4.5.5 The decision-makers

Soccer has become the world's most popular sport and morphed into a highly competitive global business, requiring the recruitment and retention of the best talent both on and off the field (Parnell et al., 2018). Determining a young player's upward mobility within a professional club's organisational structure is not just an exercise in talent development, but also talent management, which is an essential challenge for any business where human talent drives a competitive advantage (Bailey et al., 2019). According to the present study's findings, the influential decision-makers determining which players will transition from the YA to the RT, and from the RT to the FT, are club executives and technical staff. Unsurprisingly, the FT head coach, who manages various critical aspects that can impact on-field performance (Paola and Scoppa, 2012), was rated an *extremely influential* decision-maker in determining which players transition from the RT team to the FT. Most stakeholders also reported that the RT head coach, FT assistant coaches, and sporting director are also heavily involved, and all were considered *very influential* in the process.

The sporting director holds a critical role in a club's organisational culture and structure, overseeing daily practices across the different club entities and managing the performance of various sporting departments, such as sports science and medicine and administration and operations (Parnell et al., 2018). Interestingly, approximately a third of respondents reported that the sporting director was not involved in the decision-making process for players transitioning from the YA to the RT. This may be due in part to the relentless and intense demands that characterize modern professional soccer, pulling focus and attention predominantly to matters that directly concern only the FT entity (Parnell et al., 2022).

Beyond technical and executive leadership, expertise from analytics, medicine, and sports science were considered largely uninvolved in determining players' upward mobility. A recent survey revealed that while sports analytics service provision is widely recognized as a worthwhile business solution that can aid player recruitment practices, both the existing data ecosystems and limited staffing structures in place within professional clubs often fail to meet the needs coming from within these organisations (Lolli et al., 2024). Additionally, while sports science and medicine practitioners are well positioned to support decision-making processes related to the youth-to-senior transition, providing key insights into players' performance, injury risk, and long-term development trajectories, they may face obstacles within the organisation, such as adoption or dissemination failure (Eisenmann, 2017).

4.5.6 Psychological support

The turbulent nature of within career-transitions in elite soccer (i.e., contractual release, demotion from the FT, serious injury, etc.) (Mitchell et al., 2020), combined with the potential for career shock (Akkermans et al., 2018), and the implications for player well-being warrant the provision for psychological support in professional soccer clubs. However, stakeholders reported a dearth of psychological support for transitioning players in MLS, while other bespoke strategies, such as strength and conditioning support, are widely available. In more established academy systems (i.e., Premier League, UK), psychological support is part of the multidisciplinary services outlined in the Elite Player Performance Plan (EPPP) and in the last two decades, British academic institutions have embedded legally regulated practitioners into professional clubs to facilitate and support the youth-to-senior transition (Champ et al., 2020). This process has empowered practitioners to support players with their role in the social environment (Champ et al., 2020), or deal with micro-level changes, such as moving to another club or country (Egilsson and Dolles, 2017). However, academy systems, including the EPPP, have drawn criticism for promoting early sport specialization, which can lead to psychological

overload from excessive demands (Read et al., 2016). In addition, evidence from deselected English academy players suggests they experience psychological distress including, anger, anxiety, depression, fear, and identity crisis (Blakelock et al., 2016, Brown and Potrac, 2009). It is unknown what the consequences are for deselected players from MLS academies, as they may have opportunities to continue their athletic pursuits in US collegiate soccer and future research is warranted.

4.5.7 Reserve team and youth academy environments

As reported in the previous section, stakeholders shared uncertainty on whether the RT and YA environments mentally prepare players for FT soccer. Coaches working for their club's RT have noted a lack of clarity over what the *right* environment is for this club entity and find the task of preparing their players for the FT difficult as their roster can be made up of a very diverse group of players who are at different stages within their development (Dowling et al., 2018). Often, a roster can be made up of RT contracted players, along with temporarily demoted FT players in certain circumstances (e.g., return-to-play process following acute injury), as well as promoted academy players.

Researchers have contended that when young players join the FT, they are often insufficiently prepared because they lack the skills, knowledge, and experience to cope with its brutish, hyper-masculine, and results-driven nature (Richardson et al., 2012). These socio-cultural features that characterize FT soccer are also a stark contrast to the YA level that aspires to provide a more caring and nurturing environment for player development purposes (Richardson et al., 2004). Hence, there are two counter sub-cultures coexisting within a professional soccer club, and this cultural gap underscores the scale of the psychosocial demands facing young transitioning players when moving upwards within a club's organisational structure (Aalberg and Saether, 2016, Relvas et al., 2010, Richardson et al., 2012). Despite this dichotomy between performance and development-oriented environments

(Lyle, 1997), professional clubs should not allow this notion to deter efforts to optimize player development strategies (Mills et al., 2014). For example, coaches can encourage developing players to raise their level of awareness and ownership of the developmental process through the adoption of reflective practice (Mills et al., 2012). Such efforts by coaches, in combination with professional psychological support, can provide players with a more holistic development environment and enhance their preparation for the challenges and adversity they will face, while their absence may instead compromise players' psychosocial and socio-emotional development, which together could ultimately impact opportunities to successfully progress into the FT (Mills et al., 2014, Mitchell et al., 2021).

Stakeholders were also undecided over whether the YA environment prepares players physically for the FT. An increase in physical demands has been cited by both coaches and transitioning players (Morris et al., 2016, Swainston et al., 2020), and there is evidence of a physical gap between the youth and senior levels when comparing training and match loads (Houtmeyers et al., 2021, Reynolds et al., 2021). In competitive matches, under-18 academy players generally record less high-speed running distance (>19.8 km/h) than under-23 players, and less sprinting distance (>25 km/h) than FT players (Reynolds et al., 2021). When examining differences in weekly training loads, under-19 academy players recorded greater low-velocity distances, due in part to longer session durations as well as a higher number of weekly sessions, but for sprint velocities (>25 km/h), recorded significantly less total distance than the FT (Houtmeyers et al., 2021). Hence, coaches and sports science staff working in a professional club's academy must ensure their physical development programmes are appropriately preparing young players for the demands of professional soccer. In practical terms, academies should first quantify the physical gap between the club entities, including all age categories, and progressively train their young players toward closing these gaps (Burgess and Naughton, 2010).

4.5.8 Competition programmes

Research suggests that competition programmes play a crucial role in talent development pathways, providing structured opportunities for young players to progress into professional soccer (De Bosscher et al., 2006, Houlihan and Green, 2008, Lyle, 1997). At the time of this study, MLS organisations operated professional RTs in either the USL Championship or MLSNP, that of which was in its inaugural season (i.e., week 12). Given its brief existence, stakeholders may have naturally responded neutrally when asked whether MLSNP adequately prepares players first division soccer in MLS (Table 4.12). As a result, more time is needed to assess its long-term impact on player development.

In general, club stakeholders were in agreement that international youth tournaments for the U-20 and U-17 age categories prepare players for the first division and lower divisions (i.e., 2nd and 3rd divisions) in the US soccer pyramid, respectively (see Tables 4.13, 4.15, 4.16). The opportunity to compete in these international competitions exposes young developing players to high pressure situations where they must perform to their maximum, which may subsequently lead to learning skills and behaviours that are necessary to compete at the senior level (Pain and and Harwood, 2008). However, participation in youth NT programmes, especially at young age levels, does not reliably predict future professional success (Schroepf and Lames, 2018). Talent identification in elite youth soccer is inconsistent, influenced by differing scouting philosophies and selection criteria. Further, national federations often prioritise immediate success in international tournaments over long-term player development, leading to selections based on current performance rather than future potential (Güllich, 2014, Schroepf and Lames, 2018, Vaeyens et al., 2008).

4.5.9 Limitations

This study included a modest, voluntary, purposeful sample of stakeholders working in MLS, and although the study adopted recruitment methods to avoid bias, the sample may

underrepresent the target population. There was a moderate completion rate (69%) number of respondents ($n = 116$) who started the survey but for unknown reasons did not fully complete it. The survey length, though, may have contributed to respondent fatigue and subsequent dropout. Ultimately, this sample is low compared to the hundreds of ‘player operations’ personnel currently working across MLS, which prevented an exploratory factor analysis and must be acknowledged when generalizing the survey’s results. Further, despite adopting procedures to void reporting bias (e.g., providing answers in line with study outcomes), a number of Likert scale responses were clustered around the mid-point, suggesting respondents opted for the neutral code, and signalling the pitfalls of utilizing a survey instrument that is not validated. Still, this is the first paper to address player development initiatives in MLS by specifically examining elements of the youth-to-senior transition, which provides unique insights into this research area from a North American soccer perspective and helps build a broader scope to the literature.

4.6 Conclusion

This study surveyed MLS stakeholders’ attitudes and perspectives on the youth-to-senior transition, offering insights into the North American soccer landscape. MLS has joined the global game by adopting a club structure model, involving academies and RTs that aim to develop young professionals for the FT. Key decision-makers determining these players’ upward mobility within MLS clubs are technical staff and executives, such as sporting and academy directors. However, the communication among club staff during the transition process may be inconsistent, potentially hindering player development initiatives. Further, while transitioning players have access to a variety of traditional support strategies, such as S&C programming, psychological support appears limited within MLS organisations. Stakeholders also reported that both academies and RTs may or may not prepare players mentally for the FT. Additionally, despite the range of competition programmes available within the North

American soccer landscape, respondents were unsure whether third-tier domestic leagues, including the newly established MLSNP, effectively prepare players for FT soccer in MLS. Future research should explore intra- and inter-department communication when players are transitioning, as well as the implications of player deselection from MLS academies.

Chapter 5

Exploring Major League Soccer
Homegrown Players' Within-Career
Transition Experiences: A Mixed
Methods Approach

5.1 Overview

Chapter five is the second of three empirical studies in this doctoral thesis. The majority of content in this chapter is a presently under review with the Taylor and Francis publication, *Journal of Sports Sciences*, specifically for a special issue on TID environments in sport.

5.2 Introduction

Homegrown players in the US are experiencing unprecedented opportunities to pursue playing careers in first and third division domestic leagues that are part of MLS' growing ecosystem. Launched in 2022, MLSNP, serves as a developmental league for MLS' professional RTs. From 2014 to 2022, multiple MLS clubs operated RTs that competed in second and third division leagues organized by USL. However, with the advent of MLSNP, the longstanding partnership between MLS and the multidivisional domestic league organisation, USL, was subsequently terminated. By establishing MLSNP, however, MLS had effectively centralized its talent development pathway, referred to as the PPP. When investigating talent development pathways within professional soccer, researchers and applied practitioners must take into consideration the various transitions that a player may encounter during their career (i.e., within-career transitions) as they attempt to progress upwards through their club's hierarchical organisational structure to eventually reach the FT.

5.2.1 Within-career transitions in professional soccer

A career transition is described as a phase or moment in a players' development, that can at times be accompanied by stress and uncertainty regarding its implications for their career trajectory (Stambulova et al., 2009). Career transitions related to players' pursuits in professional soccer can be categorized as normative (i.e., predictable), non-normative (i.e., unpredictable), and quasi-normative transitions (Stambulova et al., 2021). A normative transition, such as the transition from youth to professional adult soccer, describes changes that

a player would naturally be expected to face during their career. Contrastingly, a non-normative transition captures the unexpected and volatile elements of professional soccer such as injury, deselection, or failure to attain a FT contract (Finn and McKenna, 2010, Nesti et al., 2012). To move beyond the binary taxonomy between normative and non-normative transitions, however, and provide more comprehensive insight of all other transitions players may face during their careers, sport psychology researchers recently introduced the quasi-normative transition (Stambulova et al., 2021), which is a predictable transition typically involving only a select group of players (Kent et al., 2022).

Two quasi-normative temporal transitions that are relevant to talent pathways for both youth and professional soccer players include the loan transition (LT) and the club-to-international (CIT) transition (Kent et al., 2022, McKay et al., 2022). Regarding the former, both youth amateurs and professionals may often undergo a LT, during which they are temporarily transferred to another club, which subsequently provides them with the opportunity to further their development and enhance their career progression by competing at a lower professional level (Bond et al., 2020, Champ et al., 2020, Prendergast and Gibson, 2022). Meanwhile, the latter occurs when a player is selected by their national federation to represent their country in international competition, resulting in a temporary move from their club to their respective national team (NT), after which they return to their club environment (McKay et al., 2022). For young developing players, the opportunity to represent their country's NT at the youth level is perceived as a vehicle that can propel their career closer to the professional level (Edwards and Brannagan, 2023, McKay et al., 2022), but like any within-career transition, it presents various demands on and off the field that can potentially disrupt a players' development and the potential for career progression back at their club (Edwards and Brannagan, 2023, McKay et al., 2022).

While the available literature exploring youth and professional soccer players' within-career transitions experiences has provided valuable insights, this research has been exclusively concentrated in England. Inadvertently, this narrow lens has overlooked the diverse transition experiences of players in other established or emerging soccer nations. Therefore, this paper's scope will be move beyond the English context by exploring MLS' relatively new PPP to understand the present state of player development in this evolving and ever-expanding professional soccer ecosystem.

5.2.2 The context of career transitions in MLS

As a result of MLS' league expansion and youth development initiatives since 2005 and 2007, respectively, more youth soccer players are entering the PPP system. Due to the establishment of MLSNP, many clubs have begun to adapt their homegrown player recruitment strategies, opting to sign adolescent prospects from their YA to either professional or amateur contracts with their RTs. However, clubs have historically signed their top adolescent YA prospects, particularly those who are regularly selected to represent the US at the youth international level, directly to professional FT contracts, designating them as homegrown players in their 30-player rosters. It is often the case though that these young professionals are unprepared for this normative transition from the academy to the FT, as they lack the experience and skills to cope and perform in first division soccer (Richardson et al., 2012). Further, MLS homegrowns face a critical challenge experienced by other young professionals in global soccer when transitioning into the FT, which is limited playing opportunities (Mitchell et al., 2020, Swainston et al., 2020, Swainston et al., 2022). For young professionals, not playing regularly in competitive matches can pose a significant threat to their development, particularly if their schedules are strictly regulated according to the FT training programme, which predominantly prioritizes preparation and recovery for competition rather than addressing individual developmental needs (McGuigan et al., 2024, Mitchell et al., 2020).

Clubs therefore commonly employ an organisational strategy where their adolescent homegrown players train full-time with the FT on a weekly basis before temporarily demoting them to the RT via a short-term loan agreement, ensuring they gain valuable playing time on the weekend. In the context of MLS, this type of LT is fairly common practice to ensure players have ample opportunity to accrue match play experience. Additionally, when selected for international duty, these adolescent professionals also have opportunities to compete against top youth international opposition. Consequently, many talented adolescent homegrown players shift between multiple team settings within their MLS club and the USSF, rendering unique transition experiences as their commitments are spread across different teams with differing interests and priorities which can be disorientating for young players to navigate during this pivotal period in their careers (FIFA, 2021). Therefore, this study explored MLS homegrown players' within-career transition experiences to understand the state of player development during the transition process to FT soccer. By collecting quantitative match event data from a single competitive season to confirm their transition status and integrating it with qualitative descriptions of the players' experiences in navigating these periods in their careers, this study can begin to understand the complex nature of player development in a domestic league vying to become a major protagonist in the global sport of soccer.

5.3 Methods

5.3.1 An integrated methods design

The present study adopted a variant of the explanatory sequential mixed methods design (i.e., preliminary quantitative input; Figure 5.1) to explore MLS homegrown players' various within-career transition experiences and investigate the impact that these transitions have had on their development (Creswell and Plano Clark, 2017). The first phase required quantitative data, specifically match event data from official club and international competitions (Morgan, 2017). This provided confirmation of suitable participants that registered match appearances

and subsequently match exposure with two or more teams (i.e., FT, RT, NT) during the calendar year, as the MLS in-season and postseason phases traditionally run their entirety from February to October and October to December, respectively. The homegrown players selected for this study were still in the process of establishing themselves within their clubs' FT. On various occasions, most of them were temporarily shifted to their club's RT entity (i.e., LT) for match play opportunities or were selected to represent youth level NTs (i.e., CIT) in international tournaments (Figure 5.2). The second phase included a series of qualitative interviews to provide context, depth, and detail to the quantitative data before employing an integrated approach to explore and understand these MLS homegrown players' transition experiences.

5.3.1.1 Philosophical position

As more weight was attached to the qualitative arm of this mixed methods study, it was framed within a relativist ontology and interpretivist epistemology. This approach assumes social reality, or lived experience, to be subjective and varied (Hesse-Biber, 2010), while knowledge can be synthesized through social interactions between researchers and participants (Smith and Sparkes, 2008). Thus, the qualitative data collection techniques (e.g., semi-structured interviews) is considered a social engagement between both the interviewee and interviewer that results in co-constructed knowledge about experience, understanding, and meaning (Smith and Sparkes, 2017). The present study's findings represent the perceptions of the players' lived experiences, navigating within-career transitions in a professional soccer ecosystem that is ever-changing and evolving. In keeping with the interpretivist stance concerning *situatedness* of knowledge, the aim of this research is to instill understanding of the context of MLS from transitioning players' perspectives rather than reveal some profound discovery within North American professional soccer (Willis, 2007).

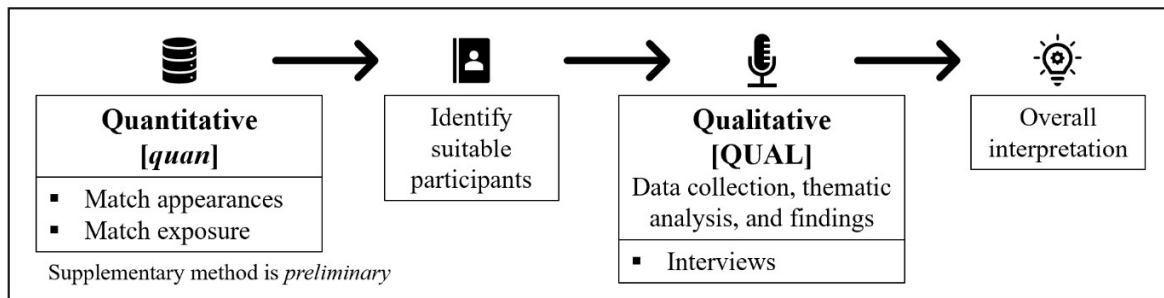


Figure 5.1. The preliminary quantitative input design where the supplementary quantitative method provides input to the core qualitative method (i.e., quan + QUAL).

	Preseason		In-season								Post-	Off-season	
Team Setting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
First Team <i>Contracted homegrown player</i>	■	■	■	■	■	■	■	■	■	■	■	■	
Reserve Team <i>Loan Transition</i>				■	■	■	■	■	■	■			
National Team <i>Club-to-International Transition</i>	■	■		■		■	■	■	■	■			

Figure 5.2. A schematic outline of a single participant's match schedule with three different teams during phase one data collection.

Notes: Gray boxes represent the team setting the player was situated in, while the black dots ($n = 56$) denote an official match in which the participant was rostered (i.e., scrimmages and preseason friendlies are not included).

5.3.2 Participants

Ten full-time professional soccer players agreed to participate in the present study (Table 5.1). To ascertain a variety of views and perspectives, players from different playing positions were purposely selected, including goalkeeper ($n = 2$); defender ($n = 4$); midfielder ($n = 2$); and forward ($n = 2$). When the semi-structured interviews were conducted, participants were 18-19 years of age ($M = 18.3$; $SD = 0.48$ y). To be eligible for inclusion, participants had to be contracted as a FT homegrown player with an MLS organisation that also operated a professional RT. At the time of completing phase one data collection, six participants were contracted to clubs that operated RTs in MLSNP, while four participants were contracted to clubs that still operated RTs in USL Championship. Additionally, all participants were youth international soccer players, having been selected during phase one data collection to attend

either a domestic or international camp, or both. Following ethical approval from the institutional ethics committee (22/SPS/079), the lead investigator contacted the eligible participants and briefed them about the study, its aims, and what was required of them to participate. Given the lead investigators' culturally embedded role within the national federation, prior to recruitment the author discussed ethical power relations with members of the research team. The lead investigator was conscious of the power imbalances which can exist between researcher and participants (Lahman et al., 2011), and thus the participants were assured that their participation or nonparticipation would not affect their standing within the federation. Further, they were informed that all non-anonymized data would only be seen by the lead investigator and his academic supervisors and could not be accessed by their coaches or any other stakeholders within their club or the national federation. To protect the identity of the participants, the research team also elected to replace their real names with pseudonyms, along with any club identifiers stated in the interviews.

Table 5.1. Participants' demographic information.

Name	Position	Age	Years in the Club's Youth Academy	Years in the Club's First Team
Barry	GK	18	6	1
Dante	GK	18	3	3
Felix	CB	18	6	2
Wallace	CB	18	7	2
Franco	FB	18	6	1
Kevin	FB	18	4	2
Jonah	CM	19	2	4
Xavi	CM	19	1	1
Jacob	WF	18	7	2
Quinton	WF	18	2	1

Notes: CB = Centre back; CM = Central midfielder; FB = Full back; GK = Goalkeeper; WF = Wide forward

5.3.3 Data collection

5.3.3.1 Quantitative inputs: match appearances and match exposure

As part of the lead investigator's professional remit, he systematically collated participants' match-related event data, including their roster selection status (i.e., starter, substitute, reserve, and non-rostered) and minutes played in official competitions with their club (i.e., FT and RT) and the national federation (i.e., NT). These data were collected to determine the following measures:

Match appearances = the total number of soccer match entrances as either a starter or substitute.

Match exposure = the total number of soccer match minutes played.

Event data from domestic leagues, domestic and continental cup competitions, club friendlies, and international friendlies and tournaments were included for analysis (Table 5.2), which were collated from domestic league websites (i.e., mlsoccer.com, mlsnextpro.com, uslchampionship.com) and a single confederation website (i.e., 130oncacaf.com). Two sports analytics companies are responsible for generating the event data published on the websites for the confederation (DataFactory, Buenos Aires, Argentina) and all three domestic leagues (Opta Sports, Stats Perform, London, England). Meanwhile, GPS technology (Apex, STATSports, Newry, Northern Ireland) was also utilized as a solution for more obscure international tournaments hosted in Central and South America, and Europe. The sole GPS variable selected for analysis was duration (i.e., minutes played). This resulted in less than 10% of match exposure data being captured by GPS. In total, 397 individual matches were considered for the preliminary quantitative method. It also noteworthy to add that all competitions included in this study's analysis were observing the International Football Association Board's temporary amendment, allowing teams to use up to five substitutions per match in response to the impact of the Covid-19 pandemic on professional soccer.

Table 5.2. Percentage distribution of competition programmes included for analysis.

Level	Competition type	Percentage
First team	First division domestic league	50
	Domestic cup	3
	Continental cup	1
	Club friendly	1
Reserve team	Second division domestic league	8
	Third division domestic league	17
National team	International tournament	19
	International friendly	2

5.3.3.2 Qualitative core: semi-structured interviews

Before conducting the interviews, a provisional guide was developed based on relevant transition research in professional soccer (Morris et al., 2017, Swainston et al., 2020, Swainston et al., 2022), as well as contextual knowledge and an applied understanding of the North American soccer landscape (Mannix et al., 2025). The interview guide included both open-ended and supplementary “pocket questions” to encourage maximum voluntary dialogue (Josselson, 2013, Smith and Sparkes, 2017). It was reviewed by two experienced qualitative researchers to determine the suitability of the questions and the proposed interview structure before being pilot tested with two MLS homegrown players not involved with the investigation, allowing for minor alterations to be made to the order of questions and language used. The final interview guide was organized into four categories that addressed (1) players’ youth and professional careers, (2) their readiness for the FT, (3) their match exposure, (4) and any other thoughts they had on the youth-to-senior transition process. To help stimulate a deeper, richer discussion with the participants, the interviewer employed a graphic elicitation technique (Crilly et al., 2006), whereby each player was presented with visual representations (i.e., tables, figures, and monthly calendars) summarizing their event data (Edwards and Holland, 2013). The decision to employ a graphic elicitation technique was to assist with the interview process by providing a more illustrative representation of the players’ professional and youth international careers. To be clear, this was not member validation, but rather a process to help

the lead investigator with probing participant responses and to stimulate participant recall. For example, the visual representations helped player's recall on certain high- and low-points during particular periods in the calendar year, which subsequently helped steer them in their reflections. Further, to stimulate authentic, meaningful reflection, and dialogue from participants on their transition experiences, interviews were held over a three-week period during the MLS off-season. The interviews were conducted via online video call (Microsoft Teams, Microsoft, Redmond, WA) and ranged from 29-55 minutes in duration, yielding a total of 404 minutes of audio-recording.

5.3.4 Data analysis and integration

All quantitative data analysis was performed in Microsoft Excel (Version 2310, Microsoft, Redmond, WA, USA). Players' appearances and match exposure were organized and summed by team setting, and the latter measure was converted into percentages. The following qualitative terms were adopted when describing percentages of players' match exposure: all = 100%; most = $\geq 75\%$; majority = 75-55%; approximately half = $\pm 50\%$; approximately a third = $\pm 50\%$; a minority = $< 30\%$. Next, for the qualitative data, a six-stage process of thematic analysis was employed (Braun and Clarke, 2006). Not only is it a widely used method in qualitative sport, exercise, and health research (Braun et al., 2017), but it is also useful for examining the perspectives of different research participants, highlighting similarities and differences across rich data sets, and generating unanticipated insights (Braun and Clarke, 2006, Sparkes and Smith, 2014). Further, thematic analysis has been employed previously by researchers investigating club practitioners' perspectives on the barriers associated with the youth-to-senior transition (Mitchell et al., 2020), as well as players' perspectives on their transition experiences in professional soccer (Morris et al., 2017), highlighting its usefulness as an analytical method for transition research. Following the completion of qualitative data collection, the interview audio files were transcribed verbatim

and subsequently reviewed line-by-line on multiple occasions by the lead investigator to familiarize himself with the text and generate initial codes. Once coding was completed, the lead investigator next sorted the codes into potential themes. The research team then discussed the themes that were developed, providing alternative perspectives of the participants' accounts, along with revealing any potential bias and reinforcing initial interactions, which ultimately led to theme refinement. Finally, the raw themes were organized into lower-order themes and then high-order themes by the lead investigator before being reassessed by the research team.

5.3.5 Rigour and trustworthiness

The research team collectively has significant experience and engagement in professional soccer settings and the lead investigator has worked in the youth and professional US soccer landscape for the past ten years. To ensure rigour and meet the trustworthiness criteria of qualitative research, the research team also followed crucial procedures throughout this investigation. First, while conducting this qualitative research, the lead investigator maintained a reflexive journal, capturing both his descriptive and reflective accounts throughout the data collection, analysis, and write-up phases of this research. Second, the lead investigator relied on his academic supervisors to act in a critical friend capacity (Sparkes and Smith, 2014), further aiding the reflection process by challenging his understanding and interpretations, while offering alternative explanations and viewpoints of the participants' accounts. Thus, the findings generated from this thematic analysis represent the researchers' collective understanding and interpretation of the MLS players' perspectives of within-career transitions, which required them to shift between two or more team settings.

5.4 Results and discussion

Descriptive statistics concerning roster selection status exclusively for the FT are presented in Table 5.3, while the total sum of appearances and minutes played for each player across the three different team settings is presented in Table 5.4. The homegrown players' appearances and match exposure are summarized first followed by the findings from the thematic analysis. The players' views and perspectives on their within-career transition experiences were inductively analysed and subsequently five higher order and fifteen lower order themes were generated. Relevant quotes were selected to represent the views of multiple players, enabling readers to be immersed in their experiences as they navigated several within-career transitions and endeavoured to evaluate and decode their development over the course of a competitive season (Patton, 2014). Further, these integrated findings provide key insights into the state of player development during the transition process to professional FT soccer.

Table 5.3. Descriptive data of match day roster selection status exclusively for the first team setting.

Status	Mean $\pm$ SD	Minimum	Maximum	CV (%)
Match count	39 $\pm$ 3	35	44	8
Rostered	22 $\pm$ 12	2	34	57
Starter	6 $\pm$ 7	0	19	113
Substitute	6 $\pm$ 5	0	15	78
Reserve	9 $\pm$ 6	2	17	62
Non-rostered	18 $\pm$ 11	5	36	64

Notes. Match count = number of FT matches in all club competitions; Rostered = Selected for the 20-player match day roster; Start = instance of entering the match as a starter; Substitute = instance of entering the match as a substitute; Reserve = Unused substitute; Non-rostered = Not selected for the 20-player match day roster.

Table 5.4. The sum of homegrown players' appearances and match exposure (i.e., minutes played) across three different team settings during the US professional soccer calendar (i.e., the MLS season runs its entirety within a calendar year).

Name	Pos	<i>First Team</i>		<i>Reserve Team</i>		<i>National Team</i>	
		Appearances (Starts)	Minutes Played (%)	Appearances (Starts)	Minutes Played (%)	Appearances (Starts)	Minutes Played (%)
Barry	GK	0 (0)	0 (0)	16 (16)	1440 (83)	4 (3)	302 (17)
Dante	GK	1 (1)	90 (5)	12 (12)	1080 (55)	9 (9)	778 (40)
Felix	CB	2 (0)	49 (2)	21 (20)	1752 (74)	7 (6)	573 (24)
Wallace	CB	4 (1)	130 (6)	16 (16)	1432 (63)	8 (8)	695 (31)
Franco	FB	27 (19)	1548 (90)	0 (0)	0 (0)	2 (2)	180 (10)
Kevin	FB	10 (2)	217 (20)	5 (5)	405 (38)	6 (4)	456 (42)
Jonah	CM	22 (13)	1038 (61)	9 (9)	662 (39)	0 (0)	0 (0)
Xavi	CM	20 (13)	1263 (61)	4 (4)	268 (13)	8 (5)	561 (26)
Jacob	WF	17 (2)	306 (16)	11 (11)	891 (48)	11 (8)	666 (36)
Quinton	WF	23 (13)	1034 (68)	5 (4)	260 (17)	6 (2)	216 (14)

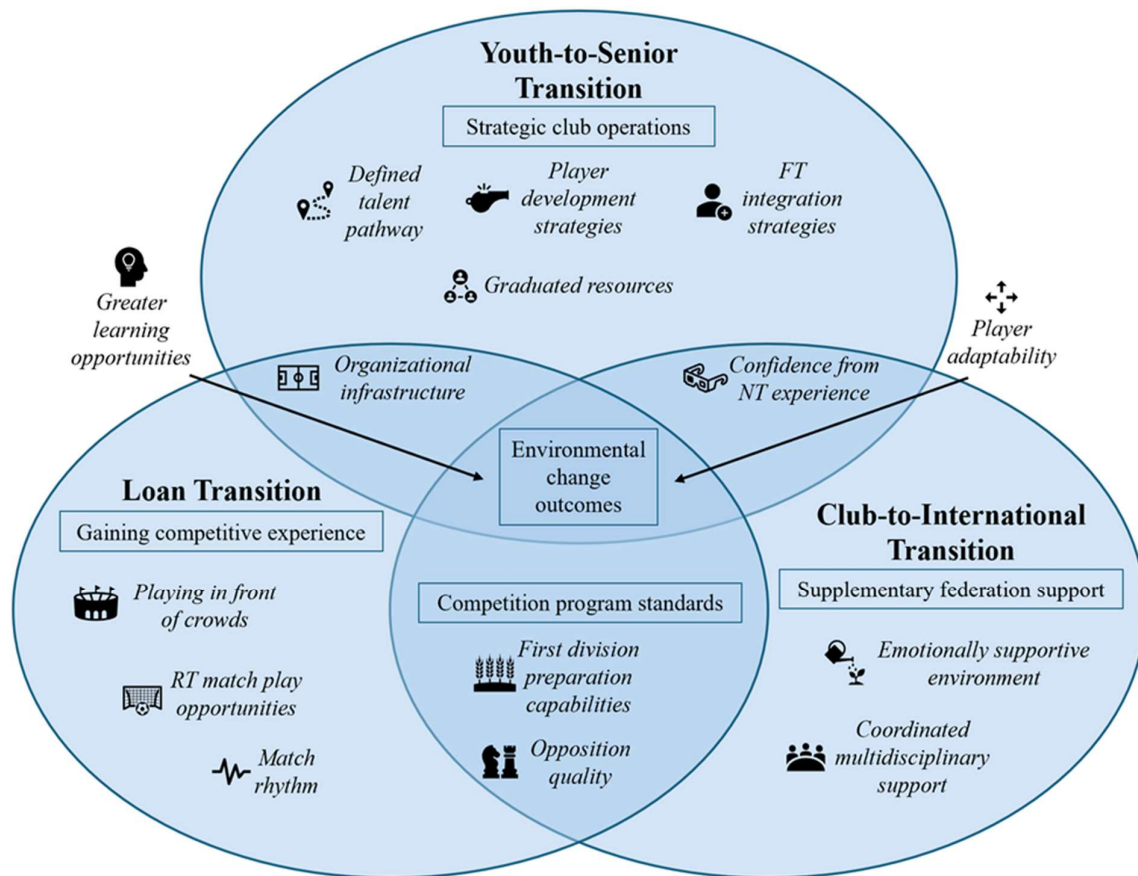


Figure 5.3. Higher and lower order themes generated from the qualitative interviews with MLS homegrown players.

Notes. Higher order themes are contained in boxes and lower order themes are italicized.

5.4.1 Appearances and match exposure

The majority of players logged match play in the three different team settings, while Barry, Franco, and Jonah did not record any appearances in the FT, RT, and NT, respectively. Although selected to attend domestic training camps with the NT, Jonah never recorded a single appearance against an international opponent in an official competition during phase one data collection. Instead, Jonah, along with Quinton and Xavi, each recorded a majority ($\geq 61\%$) of their match exposure in the FT. Franco meanwhile recorded most of his match exposure solely with his club's FT (90%). In contrast, Kevin recorded only a minority of match exposure with his club's FT (20%) but recorded more than double that in the NT setting (42%), while his remaining match exposure was recorded in his club's RT (38%). Similar to Kevin, five other players in this study, including Barry, Dante, Felix, Jacob, and Wallace recorded all or most ($\geq 75\%$) of their match play via a combination of match exposure with the RT and NT. This study's preliminary quantitative results, including appearances and match exposure, underscore the variety of player perspectives that contributed to the ensuing thematic analysis concerning within-career transitions in MLS.

5.4.2 Strategic club operations

The homegrown players identified and explained a range of pertinent strategic operations adopted by their MLS clubs that aim to support player transition processes and outcomes when progressing into the professional FT setting.

5.4.2.1 Defined talent pathway

Several players recognized the importance of being situated in an MLS organisation with a pathway that can support long-term player development aims, such as progressing players into the club's FT. In the last decade, the provision of a more definitive talent development pathway in the MLS ecosystem has been fostered by clubs that have established and maintained comprehensive organisational structures, including YAs with multiple age

categories and RTs competing in professional lower-tier domestic leagues (i.e., USL Championship, USL League One, and/or MLSNP). Franco spoke about his own pathway within his club: “honestly, it’s kind of all lined up well. I think there was a very clear pathway that I was put on.” Near the start of the season, he signed his FT contract and subsequently recorded the highest number of FT appearances amongst the target population ($n = 27$). The season prior, Franco was a RT contracted player, and he alludes to the importance of the RT entity within his club’s talent pathway: “just getting those minutes at a professional level was huge. I was playing with the second team for two years before signing with the FT, so I felt like I learned a lot, and I think it helped me make that big jump [to the FT].” For Quinton ($n = 23$), who was also playing regularly for his club’s RT before signing a FT contract during the season, he understood the scale of the performance gap between the YA and FT levels, and he emphasized that his club having a RT in their talent pathway is critical to career progression.

Without the second team, it’s really hard to make the step [to the FT]... I didn’t have to go straight from academy to FT, but [other] players might have to do that, like at Kingmont United, where they don’t have a second team right now. That can be a struggle [for young players].

These two players’ perspectives on the RT complement previous research in European soccer, which has examined this entity’s role as a development-oriented environment and a critical component of a talent development pathway for professional soccer clubs (Dowling et al., 2018, Relvas et al., 2010). Although MLS has mandated its 29 clubs to operate YAs since 2007 (Cocco and Spencer, 2019), it is unclear whether MLS internally mandates the operation of RTs.

5.4.2.2 Player development strategies

Various player development strategies adopted by coaching staff were articulated by the players. For example, half of the purposive sample shared that they experienced *playing-up* in a chronologically older age group at various points during their time in the YA. Franco elaborated: “I was given so many opportunities to play up with different age groups. I think

that was huge for me, just experiencing playing with older players, it's faster." Anecdotal evidence supports the notion that players who play-up may be exposed to higher training and match intensities, potentially accelerating development outcomes (Malina, 2010, Wiersma, 2000). Further, playing up may foster superior psychological skills and technical competence in younger players, who must cope with physical disadvantages when training and competing with their older teammates and opponents, respectively (McCarthy and Collins, 2014). More recently, however, TID researchers have recommended that longitudinal study designs must be employed to identify whether this strategy has any long-term benefits for players to successfully navigate the transition from youth to professional soccer (Kelly et al., 2021). From the present study's purposive sample, drawing further conclusions on what the impact of playing up has on future career progression would be inappropriate, as the players who reported this strategy as part of their YA experience encompassed the range of FT appearances observed during phase one data collection (Range = 0-27 FT appearances). Therefore, further research is warranted to first explore the extent of this strategy's deployment within MLS and then determine its potential impact on player transitions into first division soccer.

5.4.2.3 FT integration strategies

To initiate the transition process, players reported that their clubs adopted various strategies to incorporate eventual contracted homegrown players into the professional FT setting. In particular, the preseason phase was cited by several as the primary timeframe for their introduction and integration into the FT. For example, Felix shared his personal experience with his club, stating, "the start of 2021, that's when I was introduced into the locker room and had a preseason with [the FT]." Barry shared a similar experience: "I was with the FT right away into preseason. I'd been in [only] one or two sessions before." Contrastingly, it has been reported in the English Premier League that when young players are introduced into the FT, clubs opt for a staggered approach whereby players, prior to permanently moving up,

train once or twice a week with the FT for up to six months (Morris et al., 2015). For young players to succeed though when first joining the FT, they must meet the standards of the new environment, which demands simultaneously handling the social dynamics with FT players, the nature of the FT staff, and the competitiveness within the FT, particularly during training (Røynesdal et al., 2018). Consequently, a staggered entry system that gradually integrates young players into the FT may be the most suitable strategy for clubs to adopt when attempting to establish their homegrown talents into the FT environment (Morris et al., 2015, Morris et al., 2016). As for the more abrupt integration strategy adopted by certain MLS organisations, while this approach provides players with opportunities both to accelerate their development and be evaluated by FT staff, it also may be an indication that FT needs are being prioritized over player needs (Martin-Garetxana et al., 2023), and this strategy warrants caution, as it can predispose young inexperienced players to higher external and internal loads, along with greater levels of fatigue and stress (Martin-Garetxana et al., 2023), which they may not be suitably prepared for. As Jacob noted, “preseason is pretty rampant.”

5.4.2.4 Graduated resources

In professional soccer, a variety of specialized staff are employed by clubs to deliver multidisciplinary services to both adult professional players and young developing players within the organisation (Gregson et al., 2022, Ryan et al., 2018). Further, a recent survey highlighted that clubs’ YAs across the globe have become more professionalized by ensuring a multidisciplinary approach is implemented to develop youth players, particularly those in older age categories (Ford et al., 2020). In the present study it was reported that staffing, particularly multidisciplinary support services were allocated by clubs in a graduated manner. As the players progressed further up their clubs’ hierarchical structures, they described working with greater numbers of staff, particularly in the FT setting, who could better address their development needs by providing more individualized support strategies. Wallace summed it up

by stating, “there’s definitely more resources with the FT, including staff and coaches” while Xavi shared that “[the FT] has the best resources at your disposal, which is very helpful to stay healthy and strong.” Jonah further explained the level of support available to him in his club’s FT: “physically, you start preparing yourself more in the gym and with nutrition, especially with all the resources that [the FT] give you.” He added, “[the FT] start implementing sleep strategies and help explain how to take better care of your body.” Lastly, Dante looked back on his time in his club’s YA and shared, “I think it’s changed now, but we had one athletic trainer for the entire academy.” These findings indicate that a host of specialized multidisciplinary support services are indeed available to professional homegrown players, but only after they successfully navigate up their club’s pathway into the FT. Meanwhile, the organisational structure within some MLS academies, specifically staffing allocation to multiple teams across several age categories, may be limited. A scarcity in staffing for the YA entity may ultimately reflect that youth development is not a key component to the organisational culture and values for a particular club (Drew et al., 2019). Nevertheless, further research is warranted to investigate the current organisational structures within MLS clubs, particularly their size and scope in carrying out TID processes to optimize the overall youth development initiatives set forth by senior leadership in MLS.

5.4.2.5 Organisational infrastructure

Over the past decade, a host of MLS organisations have either built or renovated their training facilities. Some players expressed how they valued the layout of their club’s training site, as it supports not just daily club operations, such as preparing players and teams for competition, but it can also serve long-term aims by inspiring younger talents within the club and even ease young players’ transition into the professional environment (Aalberg and Saether, 2016, Lundqvist et al., 2024). Jonah recalls his time in the YA stating, “you get to see the full environment of the club, you see the pros training on the field next to you sometimes

in the morning, and that kind of inspires you.” As for Kevin, he explained recent structural modifications made to his club’s training site: “there’s four fields in our facility, and now the RT trains right next to the FT, but before they were on the other side of the facility.” Adding, “it’s better now just because of the location. Before, you couldn’t even see each other training. Now that you see each other, you really feel like you’re right next to [the FT].” This close proximity between the clubs’ professional entities (i.e., FT and RT) when holding training sessions adjacent to one another may ultimately close the perceived physical distance between the two environments, which has been previously reported to be a barrier that exists within professional soccer clubs (Dowling et al., 2018, Morris et al., 2015, Relvas et al., 2010).

5.4.3 Gaining competitive experience

The homegrown players raised various important considerations related to their match exposure within the club and international setting, specifically that playing opportunities in either environment enabled them to gain crucial competitive experience, which they purported to be beneficial to their development while they were transitioning into professional FT soccer.

5.4.3.1 Playing in front of crowds

A viewpoint shared amongst players was regarding the importance of feeling prepared and competent to perform in the presence of both local and opposition fans, as the former can help stimulate positive energy and effort, while the latter can be an intimidating force (Pollard, 1986). Correspondingly, the level and type of fan interaction young players receive has been highlighted by coaches as a transition demand (Morris et al., 2015). Prior to making his debut in MLS, Quinton had garnered previous experience playing in front of fans while in the second division.

Getting used to the fans, [as] there’s a lot of teams getting a lot of fans now in USL, so the heckling they’re doing in the stands, I got used to that... In MLS there’s 20,000 people in almost every stadium, so I think to get a taste of that before you step into a huge stadium is important because it might affect some people.

Therefore, opportunities to compete in lower division domestic leagues may be crucial in preparing players not just for on-field match play, but also for off-field activities involving local and opposition fans that are present and observing them perform, as players must learn to develop coping strategies to remain focused in these heightened competition settings (Kent et al., 2022). Further, this may also be particularly important for those MLS homegrown players who have foreign designated players (DP) as teammates, as economic research has recently revealed that these DPs impact attendance demand when playing away from home (Rewilak, 2023). One suggestion noted in the literature is to give young players the opportunity to play their first match at home, as it may help them with adjusting to larger stadiums with a greater number of spectators (Morris et al., 2015).

5.4.3.2 RT match play opportunities

The win-at-all-costs nature of the FT renders an environment in which young professionals typically receive limited match play opportunities, as head coaches will often rely on more proven senior FT players in their rosters (Nesti et al., 2012). Consequently, a temporary demotion to the RT can be a solution that ensures developing players obtain competitive match play opportunities (Prendergast and Gibson, 2022). Jacob, who only recorded a minority (16%) of match exposure with his club's FT, explains his perspective on this predicament: "So obviously the goal is to be playing in the FT... I'm not upset I'm playing second team... I would rather not because I want to be playing FT, but I like games. I enjoy playing, so game minutes are important." Several others echoed similar sentiments concerning match play opportunities with the RT, such as Wallace, who also recorded only a minority (6%) of his match exposure in the FT setting: "The second team gives me games... game form rather than just training." For both players, they have acknowledged that match play opportunities with the RT are important to compensate for the limited opportunities they may have had with the FT over the course of the season. However, they are both second year professionals, and

while their comments may reveal that they are presently coping with setbacks related to roster selection, a longer period ahead with limited opportunities in the FT may eventually challenge their motivation and confidence (Swainston et al., 2022).

5.4.3.3 Match rhythm

The majority of the players also referenced the importance of not only getting simply match play opportunities, but also maintaining a steady rhythm of match play, whereby they are playing in competitive matches weekly. For Wallace, he recorded 28 match appearances across the three different team settings, and he explained a general perspective held by players: “nobody wants to go more than a couple weeks or a month without a competitive game because then you get rusty... little things are off, and that can make a huge difference.” He later added: “I think playing a lot of games. It doesn’t really matter who it was with... it’s definitely improved my development.” Besides its importance in sustaining physical fitness parameters related to match performance (Anderson et al., 2016, Silva et al., 2011), regular match play is a vital component for young players’ individual development, as it can help promote them to a higher standard of play (Williams et al., 2020). Nevertheless, responsibility falls on club stakeholders, including coaching and multidisciplinary staff across the varying entities (i.e., FT, RT, and YA), to collaborate on transitioning players’ training and match loads accordingly, particularly if those players are regularly shifting between the FT and RT over the course of a season (Martin-Garetxana et al., 2023, Martin-Garetxana et al., 2024).

5.4.4 Supplementary federation support

All the homegrown players in this purposive sample were selected for international duty. In NT camp, players felt that the staff and their teammates together provided an emotionally supportive environment for them, and that their needs were met thanks to the delivery of coordinated multidisciplinary services. Some even contended that they returned to

their club environment with greater confidence, which enabled them to foster better coping mechanisms to handle the demands associated with the youth-to-senior transition process.

5.4.4.1 Emotionally supportive environment

Both staff and teammates together made up a support network for the players while in the NT setting. Social support has been previously cited in the club setting as a critical resource for young players when navigating within-career transitions and its absence may become a significant barrier to successful transition outcomes in professional FT soccer (Morris et al., 2015). In the NT, Kevin alluded to meaningful connections he had with his teammates, as they found themselves all in a similar career phase. He expressed the following: “I get along really well with the kids because we all come from the same place, so we all are similar in ways, even outside of soccer.” Kevin’s subtle comments reference the different domains (i.e., athletic, psychological, psychosocial, academic, vocational, and financial) of young players’ lives in and outside of sport (Wylleman and Reints, 2010), highlighting that within-career transitions in professional soccer, particularly the youth-to-senior transition, may often coincide with transitions in other spheres of life that may render the transition into professional sport even more difficult to cope with (Stambulova et al., 2009). Kevin also later mentioned: “a lot of us are in MLS, so we all relate to that, and some are in Europe, and they can relate to each other.” The latter comment from Kevin suggests that this particular NT environment may have presented opportunities for young players to provide mutual emotional support for those navigating the demands associated with the youth-to-senior transition within MLS, while others playing abroad may have shared and discussed the challenges associated with the expatriate transition, such as feeling homesick, fear, and isolation (Egilsson and Dolles, 2017). This is an important contribution to the existing knowledge base as youth to senior transitions in professional soccer have typically been viewed through a psychological lens (Morris et al., 2017). Apart from a few exceptions who provided an embodied account of their transition out

of professional soccer (e.g., Stamp et al., 2023), there is limited understanding surrounding the social relations of transitioning players and their relationships with others. Based on this finding, perhaps there is a need to consider future work which explores the emotional dimensions of the youth-to-senior transition (Roderick et al., 2017).

5.4.4.2 Coordinated multidisciplinary support

Previous qualitative research investigating youth international soccer has cited the importance of adopting inter- and multidisciplinary approaches to the organisation and planning process (Pain and and Harwood, 2008). When players report to the NT to either train in domestic camps or compete in international tournaments, they can often experience varied organisational issues, which can manifest into a number of different stressors and have a significant effect on preparation and subsequent performance (Fletcher and Hanton, 2003, Woodman and and Hardy, 2001). Consequently, a robust planning process must be undertaken by dedicated support staff that considers the players' individual needs in order to curtail sources of organisational stress, such as travel arrangements in and out of camp, hotel accommodations, and nutritional provision (Fletcher and Hanton, 2003). Additionally, sport science and medicine staff should gather relevant player information from clubs as part of their planning process, including but not limited to match exposure, physical loading (e.g., GPS), strength and injury prevention programming, nutritional strategies, and individual development plans (Buchheit and Dupont, 2018, Edwards and Brannagan, 2023). For the players in the present study, they remarked on the quality of support services they received when attending domestic and international camps with Wallace commenting that “everything’s first-class. Obviously, support staff, coaching staff, hotels, flights, all that stuff is really, really good,” while Dante noted that “nutrition, medical, performance, all that [support] was readily available to us.” Jonah further explained his perspective on the level of support given to players when in the NT setting: “how everything is run with the NT, how you prepare, how the support systems,

[including] medical and coaching staffs work, it's a different environment... but very similar to the FT, in terms of preparation and focus.” These coordinated multidisciplinary support services delivered by various staff should ultimately focus attention and effort on aiding players in the transition from their club to the national team, as this may optimize preparation strategies that lead to enhanced performance in youth international tournaments.

5.4.4.3 Greater confidence from NT experience

While the CIT presents a multitude of its own specific demands (Edwards and Brannagan, 2023, Edwards and Brannagan, 2024, McKay et al., 2022), players reported that upon returning to their club after being away with the NT, they felt a greater sense of confidence and overall positivity from their experience. For Kevin, he was discouraged by the lack of match play opportunities in his club's FT but felt fortunate to have a contrasting experience in the youth level NT setting: “So when I'm there, I obviously get more minutes when with the NT, so that helps, getting minutes, it's what makes you confident.” While he made fewer appearances in the NT ($n = 6$) relative to the FT ($n = 10$), he recorded more than double his match exposure in the former (456 minutes played) versus the latter (217 minutes played). He also later added: “it's just nice because you come back and you feel more important than you did [previously] with your MLS team, so you feel far more confident and just more ready.” Correspondingly, Quinton, who only recorded a minority (14%) of his match exposure with the NT, shared a similar sentiment: “going in with the NT has helped my development... you're in a winning culture, you're getting to play a lot of games, the practices are intense and then you go back to your club and you just... feel good.” The NT setting within the youth-level presents an opportunity for homegrown players to accrue valuable match exposure against international opponents and subsequently return to their club environment with greater confidence to cope with critical barriers part of the youth-to-senior transition process, specifically limited match play opportunities (Mitchell et al., 2020, Swainston et al., 2022).

5.4.5 Competition programme standards

Talent development pathways must provide appropriate, well-organized competition programming, as it enables young players to compete against suitable opposition, thereby providing opportunities to gain valuable competitive experience and cultivate essential skills before transitioning to the senior levels of competition (De Bosscher et al., 2006, Houlihan and Green, 2008, Lyle, 1997). Several of the homegrown players shared their views on the lower-tier domestic leagues that they participated in and discussed the importance of facing quality domestic and international opposition to support their development.

5.4.5.1 First division preparation capabilities

The players provided an analogous assessment on the capabilities of the varying domestic competitions in preparing them for first division soccer. For instance, Barry, who accumulated most (83%) of his match exposure in MLSNP, shared his perspective on the new third division league.

...it is preparing you, but it also depends on the [opposition] team you're playing. I feel there are some teams that don't really prepare you as much as others... Maybe you're playing against a certain team in MLS Next Pro and they're choosing to play [predominantly] academy players, so it almost feels like an academy game.

Barry's comments concern the roster regulations in MLSNP, which stipulate that no more than five amateur academy players per team may be on the field during official match play (MLS, 2024a), underscoring the development-oriented nature of this new professional domestic league. Meanwhile, Felix, who garnered the majority (74%) of his match exposure in USL Championship, offered his views on the second and third division leagues.

Obviously, there's talented players. I've played with players that are in MLS Next Pro, so I know there's talent there, but even without playing in that league, I would still say USL Championship is a much better league for MLS preparation than MLS Next Pro.

Both players' remarks echo earlier observations regarding the English Premier League's U-21 (formerly U-23) league system, shared by players and coaches alike. They cite the shortcomings of the match environment, which have been inadequate in exposing young players to the pressures associated with professional FT soccer (Dowling et al., 2018, Prendergast and Gibson, 2022, Webb et al., 2020). Despite MLSNP being positioned as a professional domestic league within the US soccer pyramid, its principal purpose remains as a developmental platform for young players to gain competitive match experience. Consequently, given its dual nature as a professional competition and a nurturing environment for emerging talent, MLSNP may be encountering challenges akin to those observed in the Premier League's U-21 league system.

5.4.5.2 Opposition quality

Match analysis studies have regularly included opposition quality as a crucial covariable when assessing the performance behaviours of individuals and teams (Sarmiento et al., 2014). Against stronger opponents, players will cover greater distances (Castellano et al., 2011, Lago et al., 2010), while teams will have lesser ball-possession (Lago and and Martín, 2007). In the present study, the players cited that the strength of the opposition was not only a key contributor to their development, but it also impacted their transition into FT soccer. For instance, Wallace shared his perspective on facing historically top-ranked youth international opponents: "That's something I really like, just testing myself against the best players, like if we play Argentina or England, that obviously tests a lot of things. It tests us as players, it tests us as competitors." For Wallace and his teammates on the NT, facing international opponents presented a unique development opportunity, as it exposed them to high pressure situations, which demands a maximum level of performance and may subsequently lead to learning skills and behaviours that are transferrable to senior competition (Pain and and Harwood, 2008). Meanwhile, Xavi, shared his views on facing second division opposition with his club's RT:

“going up against good teams with veteran players [in USL] was definitely beneficial for me to transition into the FT.” Xavi was previously contracted as a RT player, where he logged extensive competitive match play experience in the second division, before signing a homegrown contract and recording 20 appearances in the FT. However, Xavi’s progression into the first division is a representation of a talent development pathway that previously existed via the partnership between MLS and USL. Now that this partnership has concluded, it would be in the best interest of MLS organisations to investigate their RTs’ historical match performances in USL against MLSNP. By synchronizing GPS and coded computerized performance analysis data from the second (i.e., USL Championship) and third division competitions (i.e., USL League One and MLSNP), valuable insights concerning technical, tactical, and physical development may be produced on an individual- and team-level, which may in turn elevate coaching practices to better prepare players for first division soccer (Reynolds et al., 2021, Smith et al., 2013).

5.4.6 Environmental change outcomes

The homegrown players reflected on their within-career transition experiences, addressing the inherent difficulties that come with shifting between multiple team settings. Nonetheless, they felt that these transition experiences may have bolstered their development and career progression in professional soccer.

5.4.6.1 Player adaptability

When shifting from one team setting to the next, players must adapt to various changes in the new environment. These changes may bring about many psychosocial challenges related to the role players find themselves in depending upon which team they are situated with (Littlewood et al., 2019, Morris et al., 2016, Nesti and Littlewood, 2011). As a young goalkeeper, Dante regularly trained with the FT and recorded only a single match appearance. On weekends, however, when MLS and MLSNP scheduling allowed, he would be demoted to

the RT to participate in third division matches (n = 11). Additionally, when released for international duty, he was often selected to start in crucial youth international matches (n = 9). From these experiences, holding different roles in multiple team settings, Dante shared his view on the need to be adaptable.

Each team, each environment asked different things [of me], it exposed me to different things, and I had to learn... your adaptability as a player is massive... [if] you can adapt well to these different environments, you're going to fly, but that's the key probably when shifting between different teams.

Young players must ultimately be adaptable to the changing circumstances they encounter when navigating the challenges associated with career transitions in professional soccer (Morris et al., 2016, Swainston et al., 2020), as a playing career is often characterized by perpetual uncertainty (Roderick, 2006). During any period of adaptation, relevant staff can encourage players to reflect on previous transition experiences, such as their progression upwards through various age categories in either the club or international setting, as these past experiences may have helped them develop requisite skills to deal with similar periods of stress and uncertainty synonymous with the youth-to-senior transition (Morris et al., 2016).

5.4.6.2 Greater learning opportunities

The players reasoned that shifting between multiple team settings enabled them to be immersed in diverse organisational climates and experience variable training structures and practice activities that led to learning different playing systems. For Jacob, who recorded a relatively even distribution of match exposure across the FT (16%), RT, (48%) and NT (36%), expressed his enthusiasm in receiving a varied soccer education across the three different team settings.

...it's important to know different systems... with the national team, we play 4-3-3, with the first team we play 4-4-2 diamond, and with the second team we play 4-2-2-2, the box, and I think that learning these different things, learning different positions, learning different roles, is helping me as a player.

Xavi also touched on this, focusing on how competing in different teams, including his four appearances with the RT, afforded him opportunities to address his development.

I think it helped me develop into seeing the game in all these different lights and being able to apply different [playing] personalities on the field... with the reserve side, it gave me more of a chance to take ownership on my side... get on the ball and do a lot of the work.

These players' position conflicts, however, with previous qualitative research findings that have reported both challenges and limitations associated with the LT and CIT specifically, as these distinct within-career transitions can expose players to new playing systems and novel soccer education, respectively, which parent clubs should take into consideration when appraising players' individual needs (Abbott and Clifford, 2022, McKay et al., 2022). While a loan environment, for example, is traditionally utilized as a means of providing young developing players greater opportunities to acquire experience and playing time in a lower division (Abbott and Clifford, 2022, Kent et al., 2022, Prendergast and Gibson, 2022), it may also introduce them to new training demands and methodologies, as well as tactical principles (Abbott and Clifford, 2022). Consequently, clubs must carefully consider whether these differences in training content and playing style align with the loan player's long-term development (Abbott and Clifford, 2022). Within the context of MLS, technical leadership may need to weigh these factors when considering loaning players outside the organisation, for instance, to a USL club. As for the NT environment, the intense nature of NT camps, often involving condensed training and competition schedules, can hinder players' abilities to fully engage in learning new tactical principles and concepts presented by the NT coaching staff (McKay et al., 2022). Therefore, when players return from the NT, pertinent club staff should encourage and support those players to engage in reflecting on their performance post-camp to ensure they recognize the role that international duty has on their overall development and career progression (Edwards and Brannagan, 2024).

5.4.7 Practical implications

The development of youth players into adult professionals is a complex long-term process (Figueiredo et al., 2014). The present study reinforces the significance for clubs to operate RT within their talent pathway to support their player development initiatives. By investing in RTs, clubs can ensure that young players garner competitive match play experience when FT minutes are limited (Mitchell et al., 2020). Clubs should plan accordingly though to ensure that those players regularly shifting between FT and RT competition programmes can fully capitalize on the developmental opportunities available within each setting. Regarding player integration strategies, which aim to promote prospective homegrown talents into the FT setting, clubs should weigh the potential benefits and drawbacks of both staggered and accelerated approaches. While the latter strategy may provide opportunities to rapidly expose young players to FT demands, a more gradual approach could help mitigate the physical and mental demands associated with the FT environment, thus reducing the risks of fatigue and injury (Martin-Garetxana et al., 2023). Future research should investigate the impact of these contrasting methods, particularly in terms of physical and psychological readiness. Finally, NT experiences can play a pivotal role in player development (McKay et al., 2022), offering crucial match exposure against top international opposition that can help boost young players' confidence upon returning to their club environments. Therefore, clubs should consider engaging their players in reflective practices once they return from international duty to not only support them transitioning back into the club environment, but also to help foster their ongoing development, particularly during the critical transition process to the FT (Edwards and Brannagan, 2024).

5.4.8 Limitations

The present study is not without its limitations. First, this study has solely presented the views of 10 US homegrown players competing for US-based MLS organisations and failed to

represent the views of Canadian players competing for any of the three clubs located in Canada. The inclusion of Canadian homegrown players would have naturally provided a broader scope to the exploration of within-career transition experiences within MLS. Second, the participants selected for this study were also US youth international players, meaning this study may have subsequently recruited players undergoing relatively successful transition experiences into FT soccer compared to their less successful teammates not selected for international duty and struggling to cope with the demands associated with the FT environment (Morris et al., 2017). Although, given the historical difficulties in gaining access to professional soccer players, the lead investigator attempted to select participants with variable transition experiences in both the club and international settings simply by examining their match exposure, as this measure has been previously reported to be a key factor impacting players' perceptions of their transition (Drew et al., 2019, Swainston et al., 2022). Finally, the present study employed a cross-sectional approach, utilizing one-off, retrospective interviews rather than a longitudinal approach involving multiple qualitative interviews, which may have provided the researchers not only a greater volume of qualitative data, but also imparted richer contextual detail of the players' individual experiences in navigating the youth-to-senior transition process within MLS.

5.5 Conclusion

This mixed method study is novel in combining quantitative match event data with qualitative insights from MLS homegrown players as they transition into FT soccer. By examining both data types, the study has yielded valuable insights into MLS player development pathways and specific practices that clubs adopt to support emerging talent. The integrated findings underscore the importance of providing players with a defined talent pathway and demonstrate the critical role that the RT can play in supporting player development. The study also highlights the importance of gaining competitive match

experience albeit in different team settings, including RTs and NTs. While match exposure in the RT offers essential development opportunities when FT minutes are limited, NT experiences can also enhance players' confidence and provide them with a sense of belonging. The players' adaptability and learning opportunities across various team settings further illustrate the complexities of the youth-to-senior transition in professional soccer. Overall, this study contributes to understanding how strategic club operations, organisational structures, and environmental factors shape young players' progression to FT soccer within MLS. It also emphasizes the importance of competitive match exposure and structured pathways in nurturing talent effectively, providing valuable insights for stakeholders involved in player development and transition planning within professional soccer contexts.

Chapter 6

Supporting Player Development in
Major League Soccer during the Youth-
to-Senior Transition Process: A
Complex Adaptive System

6.1 Overview

Chapter six is the third of three empirical studies in this doctoral thesis. The majority of content in this chapter is a presently under review with the SAGE publication, the *International Journal of Sports Science and Coaching*. The quantitative data collated for this study was produced from GPS technology, entailing both absolute volume and relative intensity measures. This chapter addresses only measures of volume, while measures of intensity and their analyses were included in an abstract presentation held on 4 April 2024 at the BASES Student Conference in Manchester, UK. The abstract was also subsequently published by Northumbria Journals in the peer-reviewed journal, Graduate Journal of Sport Science Coaching Management and Rehabilitation, on 6 July 2024 and is available to readers using the following link: <https://doi.org/10.19164/gjsscmr.v1i3>

6.2 Introduction

MLS has undergone a notable evolution since its inception, increasing in the number of clubs and modernizing its PPP (Mannix et al., 2025), which has resulted in more homegrown players from both Canada and the US signing professional FT contracts. Despite MLS' considerable investment into optimizing its player development initiatives, including the establishment of a new youth league and third tier professional league for its YAs and RTs, respectively, the transition from the YA to the FT remains a particularly challenging period for young players to navigate. They often may lack the technical and tactical capabilities along with the physiological and psychological characteristics necessary to cope with the demands within the FT environment and subsequently struggle to perform, preventing themselves to sustain a career in first division soccer (Richardson et al., 2012). This poses a major challenge then for a multidisciplinary team (MDT) working within an MLS organisation and charged with developing and successfully progressing these talented young players into the FT.

6.2.1 Player transitions as a complex adaptive system

Annually, there are adolescent players in various MLS academies who are deemed to be exceptional talents by their clubs' leadership and subsequently signed directly to FT homegrown contracts. However, with the advent of a relatively new third-tier domestic league, MLSNP, clubs are increasingly opting to sign adolescent YA players (i.e., 14-18 years old) to either amateur or professional RT contracts to better facilitate the youth-to-senior transition. During this transition process, clubs frequently have their talented young prospects shift between the RT and FT settings, whereby they participate in single or multiple FT sessions during the week before playing down with the RT in official competition (Martin-Garetxana et al., 2024). This strategy, frequently employed as a means of fostering the development of potential future FT players, exemplifies the characteristics of a CAS (Best, 2011). Further, it could be argued that professional soccer clubs function as a CAS, due to their interconnected and unpredictable sub-systems (e.g., FT, RT, and YA), emergent behaviours, and dynamic interactions (Woods et al., 2020). By temporarily promoting young players to FT settings, clubs are electing to introduce them to volatile, complex, adaptive environments where they develop through exposure to senior-level challenges while being evaluated by FT coaching staff (Røynesdal et al., 2018). Similarly, MLS' short-term loan agreements allow developing homegrown FT players to compete in the lower-tier domestic league, ensuring consistent match exposure when playing opportunities in the FT are limited. These strategies reflect CAS dynamics, where local interactions at the sub-system level (e.g., individual team objectives) contribute to emergent system-wide developmental goals (e.g., transition to the FT) (Salmon and McLean, 2020).

However, such transitions also reveal the vulnerabilities of CAS, particularly the risks posed by misaligned objectives and system failures. For instance, training irregularities can arise when players regularly oscillate between FT and RT settings, as they can encounter

different training objectives, physical demands, tactical focuses, and recovery strategies (Martin-Garetxana et al., 2024). In CAS terms, this is a manifestation of adaptive tension, where competing constraints within the system create inefficiencies that impede player development (Uhl-Bien et al., 2007). Such mismatches can lead to suboptimal dynamic physical loading and recovery outcomes, thus echoing similar historical challenges faced in both healthcare and medical CAS, where fragmented systems fail to achieve synergy across interacting sub-systems (Plsek and Greenhalgh, 2001).

Further complexity is introduced when adolescent professionals are selected to join their respective youth NTs for domestic training camps or international competitions, requiring a temporary transition from their club environment to a NT programme with distinct performance priorities and demands (McKay et al., 2022). These transitions highlight the importance of boundary spanning in CAS (Goodrich et al., 2020), where individuals must operate across multiple adaptive environments, requiring mechanisms to balance competing influences and ensure coherence (Orth et al., 2019). Without effective alignment between key stakeholders and organisations, such as clubs and national federations, players face discontinuities that can disrupt their physical preparation and adaptation processes, thus mirroring outcomes well established in healthcare systems during patient transitions (e.g., Manias et al., 2016).

The dynamic, non-linear interactions inherent in CAS also create emergent properties, such as unintended training microcycle structures or cumulative physical loads (Davids et al., 2013). These outcomes are often unpredictable and may present significant effects on performance and long-term player development. Addressing these challenges requires embracing the self-organizing nature of CAS by designing performance systems that promote adaptability, collaboration, and shared learning among stakeholders (Davids et al., 2013). Despite these complexities, there is limited research on the cumulative physical demands faced

by adolescent professionals navigating multiple team settings. A case study informed by selected CAS principles is therefore needed to examine the interplay between sub-systems and its impact on player outcomes. Ultimately, viewing professional soccer as a CAS enables a more comprehensive understanding of player development, supporting strategies that balance the dynamic tensions between stability and adaptability within these interconnected and ever-evolving systems.

6.2.2 The role of performance staff

Within a professional club, sport science practitioners are responsible for managing players' performance and recovery through the application of training methodologies and technology integration strategies, such as the use of GPS. This technology enables practitioners to collect and analyse training and match load data at both individual and team levels, forming a critical part of a CAS where real-time feedback supports decision-making and is central in mitigating risk of injury and impaired performance in young players as they shift between multiple team settings (Martin-Garetxana et al., 2024). Sport scientists then play a critical role in providing feedback to their peers within the MDT and to the players themselves during their transition between different training environments (Nosek et al., 2021). Their data-driven insights on workload management derived from technologies like GPS enable real-time monitoring of individual and team dynamics, which aligns with systems thinking approaches (Bourdon et al., 2017). By integrating performance related data, communication (i.e., feedback), and tailored interventions, sport scientists act as boundary spanners, ensuring alignment and minimizing the risk of conflicting priorities that could otherwise disrupt a young player's development. Therefore, gaining unique insights from these practitioners regarding their club's approach in supporting the development of a transitioning player will elucidate valuable contextual knowledge of the youth-to-senior transition process.

6.2.3 The current study

Quantifying an MLS homegrown player's seasonal physical loading across multiple team settings (i.e., FT, RT, and NT) offers a contextual understanding of the complex and dynamic environment these players face during their transition to the FT. Understanding this complexity is crucial, as the non-linear and emergent properties of a CAS means that seemingly minor changes in one part of the system (e.g., acute training load) can significantly impact player development. Exploring the perspectives of sport science practitioners further enhances this understanding by capturing their insights into managing these demands. Sport science practitioners behave as boundary spanners within the CAS (Goodrich et al., 2020), connecting MDT members (e.g., analytics, medical, performance, and technical staff) and facilitating alignment across sub-systems. The strategies for monitoring and adjusting training and match loads reflect the feedback loops essential for maintaining system coherence and adaptability (Naughton et al., 2024). By integrating performance data and collaborative working practices, practitioners contribute to the system's resilience, ensuring players can adapt to the evolving demands of transitioning to the FT.

Consequently, the adoption of a mixed methods single case study design allows for the integration of both quantitative (i.e., GPS data) and qualitative (i.e., multi-perspective interviews) methods, enabling a holistic investigation into an MLS club's approach to player development. Therefore, this mixed methods single case study aimed to [1] quantify the seasonal physical loading of an MLS homegrown player shifting between multiple team settings and [2] explore MLS sport scientists' perspectives on the working dynamics and practices employed within their club to support player development during the youth-to-senior transition.

6.3 Methods

6.2.1 Study design

Once again, the current study adopted a mixed methods single case study design, specifically a convergent design where both the quantitative and qualitative data sources and their analyses were afforded equal priority (Creswell and Plano Clark, 2017, Doyle et al., 2016). This approach aligns with systems thinking by integrating diverse forms of data to provide a comprehensive, multi-dimensional exploration of the youth-to-senior transition within an MLS organisation. Although single case designs are rare (Onghena et al., 2019), their methodological rigour offers significant advantages (Lavefjord et al., 2021). The intensive focus in a single case allows for nuanced understanding of complex interactions and emergent properties that larger sample studies cannot provide (Van Ness et al., 2017). Further, a single case design can prove to be useful in bridging the gap between science and applied practice, elucidating important evidence concerning the training and competition demands within professional soccer, which can subsequently lead to the generation of hypotheses for future research questions (Halperin, 2018). Within this convergent design, the quantitative and qualitative data were collected and analysed separately before they were merged during the interpretation phase to develop meta-inferences, which provide deeper understandings derived from both data sources (Tashakkori and Teddlie, 2008). Therefore, the data integration for the present mixed methods single case study was achieved solely in the discussion section, providing a rich, straightforward description of the training and competition demands for an MLS homegrown player transitioning to the FT in addition to the challenges facing club sport science practitioners in managing and supporting this young professional and others like him through this process.

6.2.2 Participants

6.2.2.1 Player participant and single case selection

Prior to collating any data, this study received full ethical approval from an institutional ethics committee (23/SPS/028). Next, a professional soccer player (age = 18 y; stature = 1.73 m; body mass = 68.7 kg; position = fullback) undergoing the youth-to-senior transition provided written consent granting the principal investigator access to both his training and match load data from his club and national federation. Shortly after the commencement of the MLS season under investigation, the participant signed his first professional contract as a homegrown FT player to an MLS organisation that also operated a professional RT in MLSNP. Additionally, the recruited participant was a US youth international soccer player and was selected to participate in both a domestic training camp and a major youth international tournament whilst the quantitative data collection was being completed (Figure 6.1).

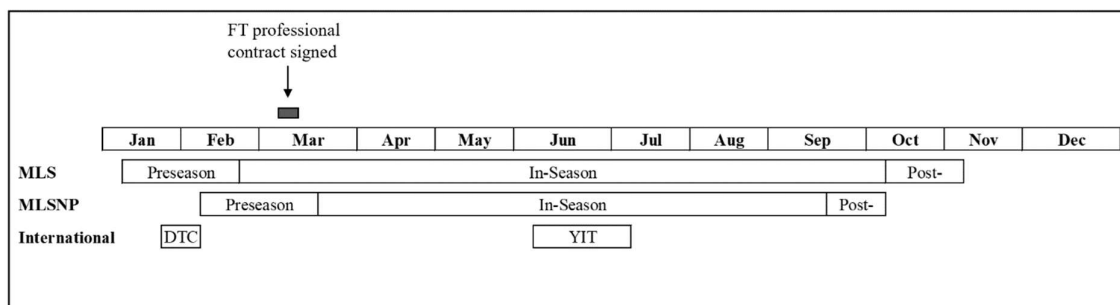


Figure 6.1. A calendar overview of MLS and MLSNP along with the domestic training camp (DTC) and youth international tournament (YIT) that the adolescent homegrown player participated in whilst quantitative data collection was completed.

6.2.2.2 Performance staff participants

To explore the youth-to-senior transition within this specific MLS organisation, two sport science practitioners employed by the club were also recruited. Both the head of sport science (Tobias, pseudonym) and RT physical performance coach (Gabriel, pseudonym) agreed to participate and were thus purposively sampled (Patton, 2014). At the time of conducting phase two data collection, Tobias, an accredited United Kingdom Strength & Conditioning Coach (UKSCA) and Gabriel, a Certified Strength & Conditioning Coach (CSCS), had two-

and four-years' experience, respectively, at the club. Gabriel was responsible for delivering performance support services to the RT, while Tobias' primary remit belonged with the FT. Prior to conducting interviews with each practitioner, both provided verbal consent, following the provision of a participant information sheet and an opportunity to pose any questions regarding the case study.

6.2.3 Data collection

6.2.3.1 External load

For the quantitative phase, pitch-based training and match loads were measured using GPS technology (Apex, STATSports, Newry, Northern Ireland). Two separate GPS devices were assigned to the player by his club and national federation, and both devices operated at a sampling rate of 18 Hz, providing information on positioning and time to calculate velocity and distance (Malone et al., 2017). These devices have demonstrated *excellent* inter-unit reliability along with valid and reliable estimates of distance and velocity (<2% typical error of measurement) when compared to a host of criterion speed and distance measures when replicating the movement demands of team sport (Beato et al., 2018, Beato and de Keijzer, 2019). In each environment, the device was activated 15-30 minutes before data collection commenced to allow acquisition of satellite signal and synchronize the GPS clock with the satellite's atomic clock. Next, it was inserted into a tight-fitting, manufacture made vest worn by the player. GPS data were collected for 40 weeks, including the preseason (6 wk), in-season (33 wk), and postseason (1 wk) phases. A total of 34 official matches, 4 non-official matches (i.e., scrimmages), 148 training sessions, and 7 post-match compensatory sessions were included in the subsequent analysis. Following each of these pitch-based events, GPS data were downloaded using the manufacturer's software (Apex Software, STATSports, Belfast, UK) and clipped accordingly (Table 6.1).

Table 6.1. An outline of the pitch-based events and a description of clipping procedures followed.

Event	Clipping description
Training session	From the beginning of the warm-up to the end of the last organized drill
Official match / Non-official match	The start of the match to the end of the match with any distances and times accrued during the halftime period removed
Post-match session	From the initiation of exercise to the cessation of exercise

6.2.3.2 Semi-structured interviews

Before conducting the qualitative semi-structured interviews, a provisional guide was developed and based on relevant literature concerning the talent development pathway and youth-to-senior transition process within MLS (Mannix et al., 2024, Mannix et al., 2025). The final interview guide was organized into two core sections that addressed [1] the youth-to-senior transition, [2] and specifics on the case study. It was designed to encourage maximum voluntary dialogue from participants by including both open-ended and supplementary “pocket questions” (Josselson, 2013, Smith and Sparkes, 2017). For example, a question was posed concerning the challenges young players generally face when they move from the youth to senior level and a follow up, pocket question narrowed in on the challenges that have made the transition hard or difficult for the homegrown player within this case study. Further, to help stimulate a deeper, richer discussion with the participants, the interviewer employed a graphic elicitation technique in which both of the practitioners were presented with visual representations (i.e., monthly calendars) summarizing the homegrown player’s training and match schedule (Crilly et al., 2006, Edwards and Holland, 2013). It was determined that this elicitation technique would assist the interview process by providing a more illustrative representation of the case study. It also aided the principal investigator with probing practitioners’ responses as well as to stimulate practitioner recall. The interviews were conducted over video call (Microsoft Teams, Microsoft, Redmond, WA) and yielded a total of 94 minutes of audio-recording.

6.2.4 Data analysis

6.2.4.1 Quasi-statistical analysis

Quantitative analysis was employed to determine both the player's training and match exposures across the three different team settings. The former is the total number of training minutes, and the latter is the total number of soccer match minutes played (McBurnie et al., 2021). For the player's seasonal physical loading, descriptive statistics were used to present mean $\pm$ SD, minimum, maximum and the coefficient of variation (CV) for weekly (i.e., Monday to Sunday) external loads. The external load variables selected for analysis were duration (minutes), total distance (km), and three different speed categories that were organized into the following thresholds: running (14.4-19.7 km/h), high-speed running (19.8-25.1 km/h), and sprinting (>25.1 km/h). These speed categories have been previously used in research within the adult men's game (Anderson et al., 2016).

6.2.4.2 Hierarchical content analysis

The qualitative interviews were transcribed verbatim, and a hierarchical content analysis (HCA) was conducted that incorporated both inductive and deductive elements whereby an unconstrained and evolving matrix enabled categories to be generated within reason (Elo and Kyngäs, 2008). The aim of a HCA is to systematize, reduce, and interrogate the content of the qualitative data by coding it, identifying consistencies, or patterns, to develop smaller and larger categories into a hierarchical structure that enables researchers to coherently describe their findings (Sparkes and Smith, 2014). To prepare the HCA, the lead investigator immersed himself in the data, reading the interview text line-by-line on several occasions. Meanwhile, he was also tagging raw data during this immersion phase, jotting down notes and headings, and beginning to detect and establish codes. Next, through the process of abstraction, codes were clustered together to create meaningful categories, which were then organized into larger, more comprehensive categories (Graneheim and Lundman, 2004, Hsieh and Shannon, 2005). The

reliability of the sub-categories was cross-checked with the raw data, while the grouping of the sub-categories under both the generic and main categories was re-examined on multiple occasions by the lead investigator before he turned over the analysis to his academic supervisors, who were not involved in the data collection process. The supervisors provided confirmation of the qualitative HCA by reviewing the findings (Sparkes and Smith, 2014), which are presented in a table format.

6.4 Results

6.4.1 Training and match exposures

The MLS homegrown player’s training and match exposures from the preseason, in-season and postseason phases across the three different team settings are presented in table 6.2. The distribution of training session types by match day code for each different team setting is presented in figure 6.2 posted below. The homegrown player completed a total of 49 tapering sessions (i.e., MD -1), 31 acquisition sessions (i.e., MD -4 and MD -3 combined), and 8 compensatory sessions (i.e., MD +1 and MD+2 combined) across the three team settings during the three different phases of training.

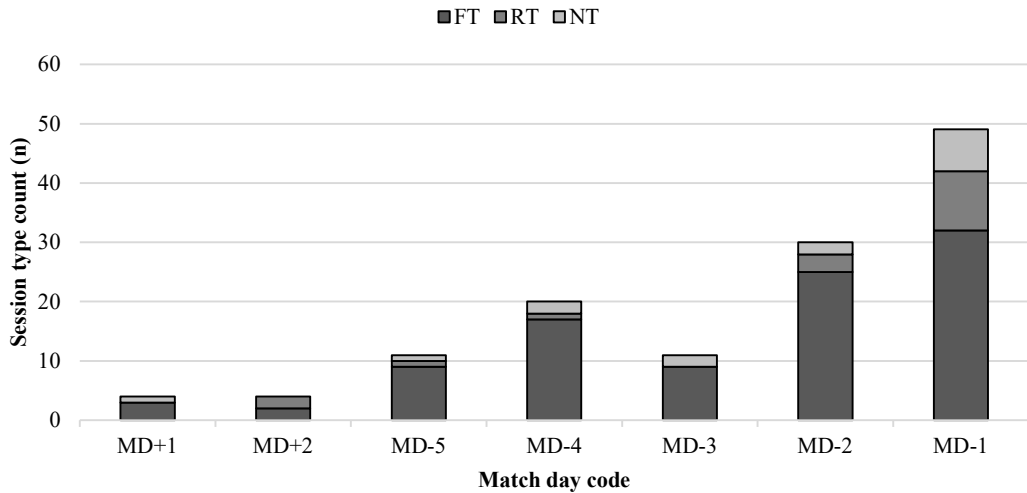


Figure 6.2. The frequency of session types during three phases of training according to their match day code for the three different team settings.

Table 6.2. Training and match exposures from three phases. Values posted in square brackets under the training and match exposure columns denote post-match conditioning sessions and scrimmages, respectively.

Training phase	Calendar month	Training exposure								Match exposure							
		First team		Reserve team		National team		Sum totals		First team		Reserve team		National team		Sum totals	
		Session	Min	Session	Min	Session	Min	Session	Min	Match	Min	Match	Min	Match	Min	Match	Min
Preseason	January	8	542	-	-	6	540	14	1082	[1]	41	-	-	[1]	41	[2]	82
	February	10	786	-	-	-	-	10	786	3	195	-	-	[1]	45	3 [1]	241
In-season	February	3	232	-	-	-	-	3	232	1	79	-	-	-	-	1	79
	March	16	1167	2	131	-	-	18	1298	2 [1]	177	1	47	-	-	3 [1]	224
	April	16 [2]	1052	-	-	-	-	16 [2]	1052	5	239	1	64	-	-	6	303
	May	13 [2]	676	2	128	-	-	15 [2]	804	1	10	4	366	-	-	5	347
	June	1	27	2	139	13 [1]	899	16 [1]	1065	-	-	1	99	3	254	4	354
	July	10	571	2	106	-	-	12	677	2	56	2	196	2	129	6	381
	August	13	721	6	395	-	-	19	1117	-	-	3	293	-	-	3	293
	September	12 [1]	814	2	102	-	-	14 [1]	916	-	-	3	291	-	-	3	291
	October	5 [1]	313	1	98	-	-	6 [1]	411	-	-	-	-	-	-	-	-
	October	4	273	1	91	-	-	5	364	-	-	-	-	-	-	-	-
Totals		117	7173	18	1190	20	1439	155	9803	16	798	15	1327	7	470	38	2595

6.4.2 Seasonal physical loading

The homegrown player's preseason and in-season GPS data are summarized in table 6.3, which provides the mean $\pm$ SD, minimum, maximum, and CV of weekly external loading. Postseason data was not included due to its duration being only a single training microcycle. Table 6.4 presents the total duration, total distance, running, high-speed running, and sprinting distances covered during each phase of MLS and is inclusive of both training and match loads. Figure 6.3 illustrates the player's mean weekly running, high speed running, and sprinting distances across three phases of MLS, including the preseason, in-season, and postseason.

Table 6.3. Descriptive data of preseason and in-season weekly external loads.

Phase	Parameters	Mean $\pm$ SD	Minimum	Maximum	CV
Preseason	Duration (min)	365 $\pm$ 109	181	507	30
	Total distance (m)	27,040 $\pm$ 5889	17,074	33,116	22
	Running (m)	3761 $\pm$ 702	3215	5027	19
	High-speed running (m)	1357 $\pm$ 632	2050	2050	47
	Sprinting (m)	389 $\pm$ 226	7	604	58
In-season	Duration (min)	298 $\pm$ 73	66	430	25
	Total distance (m)	22,515 $\pm$ 5689	4536	31,068	25
	Running (m)	2780 $\pm$ 894	438	4770	32
	High-speed running (m)	1185 $\pm$ 402	87	1762	34
	Sprinting (m)	354 $\pm$ 177	0	715	50

Table 6.4. Total external loads accumulated across the preseason, in-season, and postseason phases.

Parameters	Preseason	In-Season	Postseason	Total
Duration (min)	2191	9843	364	12398
Total distance (km)	162.2	743.0	21.1	926.4
Running (km)	22.6	91.7	2.2	116.6
High-speed running (km)	8.1	39.1	1.0	48.2
Sprinting (km)	2.3	11.7	0.3	14.3

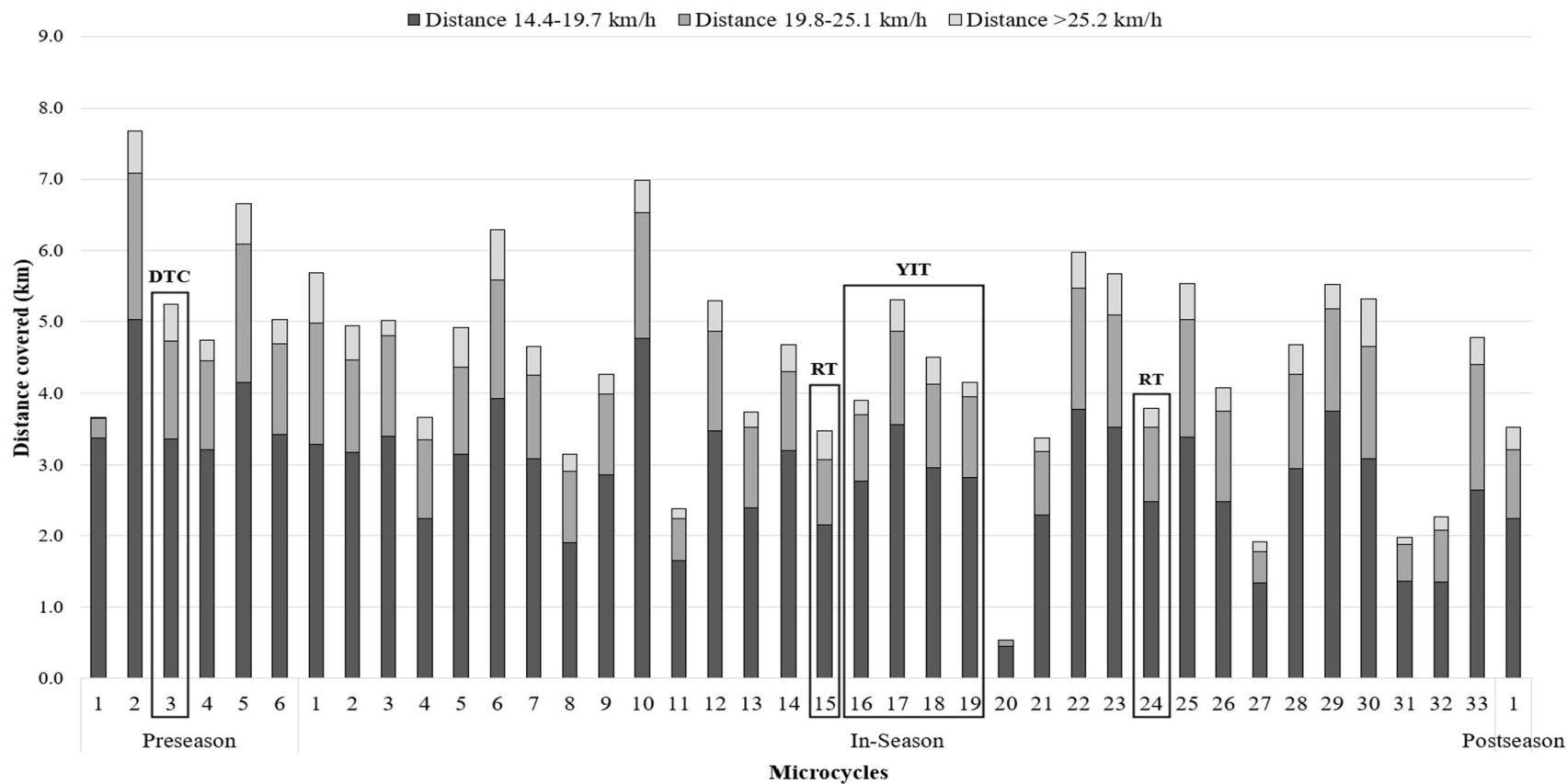


Figure 6.3. The MLS homegrown player's total weekly running (14.4-19.7 km/h), high-speed running (19.8-25.1 km/h), and sprinting (>25.2 km/h) distances across three phases.

Notes. In addition to attending two national team camps during the preseason and in-season phases, the homegrown player also completed two training microcycles exclusively within the reserve team setting.

6.4.3 Formulated categories

The HCA, presented in table 6.5, generated two main categories, six generic categories and 26 sub-categories. Both Tobias and Gabriel addressed their club's organisational aims (51 codes) and the provision of sport science support (35 codes) at the club. The former entails an overarching club strategy and structure, which employs various player development strategies aimed to support those transitioning into the FT whilst balancing the management of the squad that is training on a regular basis within the FT setting. The latter addresses staff alignment, which ensures the integration of working practices across a MDT of coaches, analysts, sport scientists, and various medical practitioners. Further, planning and periodization are key areas of practice for the two sport science practitioners given that their club operates two professional entities, including the FT and RT, and therefore technology and data management are vital for knowledge management and dissemination to coaches and other key stakeholders responsible for developing talented young players who are transitioning to the FT within this specific MLS organisation.

Table 6.5. Categories related to the youth-to-senior transition process within an MLS organisation from the perspective of its sport science practitioners.

Main categories	Generic categories	Sub-categories
Organisational aims (51)	Club strategy and structure (11)	RT aims (3) Results driven (1) Talent development pathway (2) Training site setup (1) Transfer market (1) YA aims (3)
	Player development strategies (25)	Educational interventions (4) Growth and maturation assessment (1) Holistic development (1) Lifestyle management support (4) Match play opportunities (8) Physical development (7)
	Squad management (15)	FT needs (5) FT training opportunities (2) Injury risk analysis (2) Managing shifting players (6)
Sport science provision (35)	Planning and periodization (20)	Individualized programming (3) Match exposure (2) Microcycle structure (3) Planning process (4) Rest and recovery (4) Travel demands (4)
	Staff alignment (9)	Inter-disciplinary communication (6) Intra-disciplinary communication (3)
	Technology and data management (6)	Centralized information (3) Physical performance testing (3)

6.5 Discussion

From the analysis of the quantitative and qualitative data, this study's findings have been organized into three sections, which will demonstrate the complexity and interdependence within a professional soccer club when managing the development of a homegrown player who is transitioning to the FT. The first section examines the homegrown player's seasonal physical loading with specific emphasis on the non-linear variations during the preseason and in-season phases. Next, the second section focuses on the provision of match playing opportunities for the homegrown player, highlighting the club's strategic use of its professional RT entity to bolster his match exposure as a means to support his development. Lastly, the third section explores the working dynamics of the club's MDT when players shift between the FT and RT entities. Throughout all three sections, practitioner insights from both Tobias and Gabriel

provide contextual depth related to this case study. Their perspectives illustrate the interplay between the club's *organisational aims* and the role of *sport science provision* in supporting player development during the youth-to-senior transition process.

6.5.1 Physical loading during the preseason and in-season phases

The first aim of this single case report was to quantify the seasonal physical loading of an MLS homegrown player. The GPS data revealed greater weekly external load volumes were recorded by the homegrown player during the preseason versus the in-season phase, while a large within-subject variation was also observed for both phases across all external load measures. Findings related to the homegrown player's seasonal physical loading in addition to the complications of managing this player whilst he shifted between multiple team settings during both the preseason and in-season phases are addressed in the following subsections. For the postseason phase, insufficient data was available to draw inferences due to an early elimination from the MLS Playoffs.

6.5.1.1 Preseason loading

The physical demands during preseason are generally acknowledged to be greater than any other phase of training as the primary objective during this period is to develop players' fitness in order to prepare them for the impending competitive season (Jeong et al., 2011). Consistent with this, all external load measures collected in this study, including duration, total distance, running, high-speed running, and sprinting demonstrated greater weekly volumes during preseason compared to the in-season for the adolescent homegrown player (see Table 6.3). Recently, it has been reported that RT players transitioning to the FT experience higher external and internal loads, along with increased fatigue and stress during a FT preseason compared to their previous RT preseason (Martin-Garetxana et al., 2023). These findings highlight the importance of clubs implementing well-designed transition plans and selecting the most appropriate training strategies to support the interconnected dynamics of player

development. Further, it showcases the importance of monitoring and managing the load and response of adolescent players on an individualized basis as small changes in one sub-system (e.g., acute training load in the FT) could influence others (e.g., readiness to train). Moreover, the lack of clarity on objective methods for integrating these players into the professional FT setting, combined with the dearth of established training guidelines for adolescent players in adult team sport environments in the current literature, emphasizes the need for tailored approaches (Murray, 2017).

In this single case report, the homegrown player successfully underwent a six-week preseason comprised of 24 training sessions, three scrimmages behind closed doors, and three preseason tournament friendlies. The absence of internal loading (e.g., rating of perceived exertion) and self-reported wellness response data, however, inhibits the ability to evaluate how well the player coped with the FT preseason demands. When appraising the substantial variability ($CV = 19\text{-}58\%$) in physical loading, it is important to consider the underlying circumstances of the player's participation in two distinct training environments during this demanding period. Following the second training microcycle, which recorded the greatest volumes of running (5027 m), high-speed running (2050 m) and sprinting (604 m), the player then temporarily transitioned from the adult FT setting to an age-restricted youth NT for a domestic training camp (see Figure 6.3). During the camp, he participated in six training sessions and competed in two scrimmages against external opposition.

Transitioning between club and country raises the importance of calls made by applied practitioners advocating for greater transparency from both professional clubs and national federations when it comes to exchanging players' performance related data (Buchheit and Dupont, 2018). A lack of data sharing may not only increase players' risk of injury, but it also poses a missed opportunity to optimize player development (Edwards and Brannagan, 2023). In the current study, the combination of a different playing system (i.e., tactical principles) and

a relatively younger training environment likely disrupted the club's prescribed physical loading for the homegrown player leading into the MLS season. Therefore, sports science practitioners must serve as boundary spanners for their organisations, developing relationships and establishing networks between clubs and federations to facilitate the exchange of data, which can help improve players' integration into different training environments by ensuring a more informed and tailored workload prescription is implemented (Goodrich et al., 2020). Further, such data is invaluable, particularly for club practitioners during the preseason phase, as their responsibilities generally include integrating competition programming (i.e., the number of scrimmages and friendlies scheduled), intense conditioning, and technical and tactical sessions into a cohesive preseason training programme (Gamble, 2006).

6.5.1.2 In-season loading

Similar to the preseason phase, a substantial within-subject variability in physical loading was also observed during the in-season phase (CV = 25-50%). This variability may be due in part to changes that can occur in a player's weekly training structure, including frequency, density, intensity, and volume (Connolly et al., 2024). Why these changes came to fruition though are related to multiple contextual factors specific to this case study, reinforcing the dynamic non-linearity of the youth-to-senior transition process as a CAS within professional soccer. First, the use of a squad-shifting strategy can often result in surplus physical loading dynamics due to insufficient recovery pre- or post-match (Martin-Garetxana et al., 2024). At this MLS club, the player frequently began his training microcycle in the FT, attending two or three sessions, before shifting to the RT and participating in one or two training sessions to prepare for the upcoming MLSNP opponent. In other instances, if the player was either an unused substitute or played for only a marginal number of minutes in the FT (i.e., ≤ 20 min), he was then allocated to the RT to be rostered for a match the following day when scheduling permitted. Afterwards, he returned to the FT for the ensuing training microcycle.

Consequently, this transient state, shifting back and forth between the FT and RT on a regular basis for multiple training microcycles, may have contributed to the homegrown player's week-to-week physical loading variability.

The next factor that may have impacted the homegrown player's physical loading variability is the *travel demands* within the MLS ecosystem (i.e., first and third division domestic leagues), as the geographical size of the US and Canada can often require trans-meridian air travel, extended hotel living, and alterations to training schedules, which can subsequently impair players' physical preparation for away competition (Kristiansen et al., 2012, Gilbert et al., 2020). In this study, the homegrown player was rostered for 16 away matches, including eight first division matches, seven third division matches, and one domestic cup match. Tobias remarked on the implications of travel, stating "the effects of travel, playing professional soccer in the US is huge... Travel is a big one, obviously. It impacts sleep, nutrition, training load..." Practitioners working in MLS must therefore plan accordingly to optimize the players' physical preparation and recovery by carefully managing prescribed training and match loads as the season progresses and the psycho-physiological toll of travel fatigue begins to accumulate (Janse van Rensburg et al., 2021). Moreover, a league-wide retrospective study recently reported a small positive association between cumulative travel and high-intensity (≥ 20.2 km/h) distance covered by away-teams in MLS (Draper et al., 2024). As the authors suggest though, the implications of these findings on applied practice from the available observational data are difficult to determine. Nevertheless, due to the aforementioned geographical size within the MLS ecosystem, club practitioners may wish to consider monitoring squad-shifting players' accumulated travel distance, duration, and time away as a means of managing organisational stressors related to the extensive and consistent travel.

The final factor conceivably influencing the variability in physical loading in this study was the application of *rest and recovery*, particularly after the homegrown player's

participation in a major youth international tournament (YIT) during microcycles 16-19 with the NT. Upon returning to his club, the homegrown player was prescribed a five-day passive rest period, during which he refrained from training entirely. This break, scheduled during microcycle 20, resulted in a large reduction in physical loading before full training was resumed in the subsequent microcycle (see Figure 6.3). Tobias elaborated on the reasoning behind this decision.

We managed to give him time off in July. He was keen to get straight back into it... but he'd been away for four weeks... I've experienced those [international] environments, and you don't realize how demanding they are, and players can often have a little dip [in performance] afterwards.

Due to the prolonged period away with the NT, resulting in 5 appearances and 383 minutes played for the homegrown player, the club determined a conventional prescription of passive rest was appropriate as it entered the latter months of the MLS season. Ultimately, the multiple rest days may have benefited the player's physical, psychological, and emotional recovery, subsequently mitigating any residual fatigue elicited by the cumulative impact of training, travel, and competition up to this point during the in-season phase.

6.5.2 Match play provision to support player development

Regular match play is considered to be a key component of a club's strategy to develop young players (Williams et al., 2020). From the seasonal-long accumulation analysis, GPS data revealed that the MLS homegrown player's in-season volumes were analogous to the seasonal physical loads of starters in an English Premier League club, including duration ($10,678 \pm 916$ min), total distance (816.2 ± 92.5 km), running (91.8 ± 16.3 km), high-speed running (35.0 ± 8.2 km) and sprinting (11.2 ± 4.2 km) distances (Anderson et al., 2016). Such volumes recorded in the present study are likely due to the substantial match exposure the homegrown player accrued across three different team settings, particularly the club's professional RT (i.e., 1327 min played).

Within the player's club environment, technical leadership had earmarked *match play opportunities* as a key priority for young players, which Tobias highlighted when sharing his perspective on the club's approach to developing players transitioning into the FT.

I give the manager and assistant manager a lot of credit, they were very big on making sure these young [homegrown] players got as many minutes as they could... get them the opportunity to go out there and play games, because that's how they're going to get better.

However, playing time is never guaranteed for young developing players when they sign a contract with the FT, which can impact their sense of belonging with the team, raise their levels of stress, and leave them frustrated and feeling lonely by the lack of playing opportunities (Saether and Aspvik, 2016, Swainston et al., 2020, Swainston et al., 2022). In the context of this single case report, at the beginning of the MLS season, the homegrown player was selected as a starter and substitute, logging nine appearances and 505 minutes played with the FT from February to May, but as the in-season phase progressed, the number of appearances and subsequent playing time in FT competition programming abruptly declined (see Table 6.2). Consequently, when opportunities in the FT became limited, the club opted to utilize the RT to ensure adequate match exposure was afforded to the player whilst he transitioned full time to the FT setting.

Other practical solutions for managing transitioning players include designing individualized development plans and establishing effective direct communication with the players (Swainston et al., 2022). The latter may alleviate stressors that can arise when players feel they are in a 'grey period,' whereby they do not understand what their standing is within the club (Swainston et al., 2022). Whilst the former is crucial, as it helps address players' specific developmental needs and prevents stagnation that can occur when reduced playing time coincides with a FT training schedule focused on recovery and competition preparation, rather than individualized coaching and intensive training (McGuigan et al., 2024, Mitchell et al., 2020). Furthermore, although compensatory training sessions can provide an adequate

conditioning stimulus for non-starting players (Clemente et al., 2024, Martín-García et al., 2018), competitive matches remain the most effective way to achieve high-intensity loads while also exposing players to realistic, soccer-specific stimuli essential for individual development (Anderson et al., 2016).

Exclusively within this club environment, the homegrown player completed six compensatory sessions, or “top-up” sessions, immediately post-match and seven compensatory sessions 24-to-48 h post-match (see Figure 6.2). As for match exposure, at the conclusion of the in-season phase, the homegrown player recorded a total of 26 appearances and 1796 minutes played in official competitions for his MLS club, including 11 (470 min) and 15 appearances (1327 min) for the FT and RT, respectively. Consequently, the club within this single case study outlined an individual development plan for its homegrown player, which prioritized engaging the professional third tier entity to help the player sustain regular match exposure over the course of the parallel seasons in MLS and MLSNP. Ultimately, for this MLS organisation, the RT fulfils a dual role, serving as both a development team and an extension of the FT (Mannix et al., 2024), ensuring that a developing homegrown player received sufficient match play opportunities. Further, it demonstrates that the *aims of the RT* within this club’s organisational structure can render it holding different symbolic and strategical roles (Dowling et al., 2018). As Gabriel explained, “we work hand in hand with the FT, supporting them... the goal for us is to support the FT and to have second team players ready to make the jump into the FT environment.”

6.5.3 Working dynamics when players shift between environments

By operating two professional entities along with a YA, the role of a MDT is imperative within the organisational structure of a professional club given they must operate collectively and strategically, both in the short- and long-term, to develop young players for the FT (Ryan et al., 2018). An integrated approach is fostered by communication between the disciplines and

supported by technology, such as AMSs, which can enhance practitioner understanding and facilitate improved decision-making concerning player health and well-being, as well as inform the implementation of physical preparation and recovery strategies for both training and competition (Dijkstra et al., 2014). Therefore, the working dynamics involved in *managing shifting players* can be enhanced by both staff communication and data management. Tobias touched on the latter when discussing the club's conventional approach to shifting players from the FT down to the RT setting.

There are a number of players on the fringe, [homegrown] players who have FT contracts, train with the FT in the week and then drop down to MLSNP at the weekend... we typically have them train with the [RT] the day before the game... the [external loading] data all goes into the centralized AMS and that brings it all together.

The centralization of these players' performance data allows the club's MDT to determine the readiness of incoming players when entering or re-entering either the FT or RT. In addition to having accessible physical loading data, Gabriel also referenced other forms of *centralized information*, such as programming templates, adding that "for the most part, it is shared via email, or on PowerPoint [in] OneDrive... we always try to make sure that this information is well written." Both practitioners have exemplified forms of non-verbal electronic communications that aid in the transfer of knowledge between FT and RT practitioners by providing contextual information that helps guide the management of young developing players when they are regularly shifting back and forth between the club's two professional entities (Ekstrand et al., 2019).

Complementing this non-verbal electronic communication was also more formal *inter-disciplinary communication* among members of the club's MDT. Gabriel described daily interactions that helped facilitate the organisation and delivery of the club's squad-shifting strategy.

The medical and performance meeting is generally done in the morning before training starts... we communicate with the head coaches to see if any specific player from the RT needs to move up to the FT and vice versa... we make

sure that we know which players are moving up or down... just to set all of the guidelines of what each player's schedule will be, whether they have a gym session pre- or post-training.

These rich, reoccurring interactions underscore the intricate coordination within a CAS, which is required to effectively implement a squad-shifting strategy. First and foremost, such coordination ensures that appropriate player numbers are available for training across both professional entities. More importantly though, it allows sessions to be aligned with the broader objectives of a periodized training programme. However, the enactment of periodized training programmes transcends logistical considerations and entails a social and micropolitical process (Pass et al., 2022), which depends on ongoing negotiations and working relations between various club stakeholders (Doncaster et al., 2024). Both coaches and sport scientists are often the key stakeholders responsible for implementing periodized training programmes, but it is typically the former who holds a significant influence on the loading paradigms implemented within a club (Murray, 2017, Pass et al., 2022). Consequently, this can hold major implications for young players' injury risk when clubs remove a head coach, as any incoming coach will bring new philosophies, experiences, and viewpoints on the planning and delivery of periodized training programmes (Murray, 2017).

As for the current study, Tobias emphasized the coordination between the club's coaches and practitioners when describing the *planning process* for the FT training microcycle, stating, "at the highest level of planning... myself, the high-performance director, the head coach, and the first assistant. The four of us sit in a room, talk through the week, the players, [and] who's going to be involved in the FT squad." These weekly discussions not only determined where the homegrown player would conclude his training microcycle, either in the FT or RT, but it also directly influenced the RT staff's own planning for their training microcycles and squad selections for upcoming third division matches. Gabriel reflected on the staff's flexibility to manage this dynamic: "It definitely makes us very adaptable throughout the season. We understand this... whether players get moved up or down... we always have to

have plan B and C just in case...” Ultimately, the RT must often operate in a subservient role to the FT. This tension and unpredictable dynamic can present unique challenges for RT staff, who must work effectively to create the *right* environment for a transient group of players at varying stages of development in their careers (Dowling et al., 2018). As MLS continues to expand its player development initiatives, future mixed methods research should investigate the frequency of player transitions within MLS clubs and explore the views and perspectives of various stakeholders working in these organisations to better understand how they approach effective communication and shared decision-making when transitioning players are regularly shifting between the FT, RT, and YA settings.

6.5.4 Practical implications

From a CAS perspective, the physical loading variability in this study illustrates some of the inherent complexities and adaptations involved in managing a young player’s development within the interconnected system of professional soccer in MLS. The interplay between different team settings, physical loading, travel demands, and rest and recovery protocols highlights how adjustments in one sub-system can create ripples, or even waves, across others. This reinforces the need for holistic, system-wide strategies that address the dynamic nature of the youth-to-senior transition process. For multidisciplinary staff responsible for designing, implementing, and monitoring the training and match loads of young developing players undergoing the youth-to-senior transition, the findings from this study serve as a key reminder of the importance of instilling tailored approaches that account for the unique demands of each training environment players must perform in. A holistic understanding of these demands can inform effective workload management strategies to mitigate the risk of injury, overtraining, or burnout. Furthermore, fostering open communication among coaches and multidisciplinary staff can enhance the alignment between a club’s organisational aims and

its player development initiatives, ultimately supporting the long-term progression of transitioning homegrown players.

6.5.5 Limitations and future research

Despite the valuable GPS data and practitioner insights provided in this study, several limitations and opportunities for future research remain. First, this study focused on what could be deemed a *successful* transition, which may overlook valuable information that could be gathered on players determined to be less talented or whose transitions were less effective. A comparative analysis of these contrasting player pathways could have provided a more balanced understanding of the factors influencing player development. Additionally, while this single case offers depth, conducting multiple case studies across various MLS organisations would allow for broader generalizations and uncover systematic differences in the approaches clubs take in managing the youth-to-senior transition process. Another limitation lies in the absence of specific details regarding the player's strength and conditioning (S&C) programming, as these practices, when following scientifically supported methods (McQuilliam et al., 2024), can be crucial in supporting the physical development of young players progressing into professional environments. Therefore, future research could explore the methodologies and programming strategies employed by S&C coaches during the youth-to-senior transition. Future research could also examine optimal strategies for managing player transitions between the RT and FT, employing comparative study designs to examine technical, tactical and physical performance as well as secondary measures, such as psychosocial development. Finally, longitudinal studies tracking player transitions over multiple seasons would also offer a richer understanding of long-term development trajectories and adaptations.

6.6 Conclusion

To the principal investigator's knowledge, this is the first study to quantify the seasonal physical loading of an adolescent homegrown player undergoing the youth-to-senior transition

in MLS. This study has highlighted the complexities of managing the physical loading for young homegrown players transitioning to a FT setting within MLS. Viewed through a CAS lens, the findings from this study reveal how interconnected sub-systems, including a club's FT and RT settings along with a federation's youth NT setting creates a dynamic developmental environment for young professionals. The interplay of these different team settings demonstrates that any adjustments in one area can influence outcomes across the broader system. The physical loading variability observed in this study underscores the importance of balancing long-term development with short-term performance priorities. The dynamic transitions across different team settings require tailored strategies that adapt to fluctuating demands inherent in professional soccer. Understanding and managing these complexities is essential for optimizing player readiness while mitigating risks, such as injury, overtraining, or burnout. Overall, this study reinforces the need for a holistic, system-wide approach that accounts for the interconnected nature of the youth-to-senior transition process within MLS. By recognizing the dynamic and adaptive processes at play, clubs and sport science practitioners can better navigate the challenges that come with supporting a young players' progression through the professional pathway.

Chapter 7

Synthesis of Findings

7.1 Synthesis of findings

The present chapter will synthesize the findings of this thesis, integrating and analysing them in relation to the aims and objectives outlined in **Chapter 1**. The conclusions from each empirical study will be summarised, highlighting key findings concerning the state of player development in MLS during the youth-to-senior transition process. A broader discussion will follow, providing an interpretation of the key findings, while also addressing each study's limitations and proposing future directions for further research. Finally, this chapter will evaluate the achievement of research and professional skills through a meta-reflection, considering areas identified in the self-audit previously completed at the start of the DSportExSci programme.

7.2 Research aims and objectives

The overarching aim of this thesis was *to assess the state of player development in MLS during the youth-to-senior transition process*. This was accomplished through the investigations conducted in the three empirical studies located in **Chapters 4-6**. The aims and conclusions from each study are further detailed in relation to the overall objectives of the research. Figure 7.1 presents a schematic overview of the three empirical studies completed over the course of the DSportExSci programme.

The aim of **Chapter 4** was to survey MLS stakeholders' attitudes and perspectives on the youth-to-senior transition, collating insights on [1] the organisational aims and structure within MLS clubs, [2] the capabilities of club entities (i.e., RT and YA) to prepare players for the FT, and [3] the overall transition process within MLS. This study's achievement was collating survey responses from various 'player operations' personnel employed by different MLS organisations, who are directly involved in their club's player development initiatives. The main findings from this study were that both RTs and YAs within MLS aim to develop players for the FT. Another main finding concerned the organisational structure and governance

of professional RTs, which are varied across the league, but an overarching feature is their function as a development team. When MLS players are undergoing the transition process, communication between relevant club staff may or may not always be clear and effective, which may hinder club's player development initiatives. Additionally, although a variety of support strategies are made available to transitioning players, psychological support may be limited or even unavailable. Compounding this latter finding was respondents also reporting that the RT and YA entities may or may not prepare players mentally for the FT. Together, these survey findings illustrate how the varied organisational structures and support strategies to managing the youth-to-senior transition shape player development. By highlighting key aspects that make up the transition process, this study has provided to a broader understanding of the challenges and complexities involved in developing young professionals in MLS.

Next, the aim of **Chapter 5** was to explore MLS homegrown players' within-career transition experiences to understand the state of player development during the transition process to FT soccer. The achievement of this study was twofold, including the collation of match event data from 397 professional and youth international matches followed by qualitative interviews with 10 MLS homegrown players. The quantitative match event data was utilized via a graphic elicitation technique, which provided a more illustrative representation of the players' professional and youth international careers over the course of a single MLS season. It also aided the interview process by helping the interviewer probe responses and stimulate participant recall. In the deductive-inductive thematic analysis that followed, five main themes were generated: strategic club operations, gaining competitive experience, competition program standards, supplementary federation support, and environmental change outcomes. The integrated findings underscore the importance of providing players with a defined talent pathway, demonstrate the critical role that the RT can play in supporting player development, and highlights the importance of gaining competitive

match experience albeit in different team settings, including RTs and NTs. Further, while match exposure in the RT offers essential development opportunities when FT minutes are limited, NT experiences can also enhance players' confidence and provide them with a sense of belonging. The players' adaptability and learning opportunities across various team settings also illustrate the complexities of the youth-to-senior transition in professional soccer. Overall, this study contributes to understanding how strategic club operations, organisational structures, and environmental factors shape young players' progression to FT soccer within MLS.

Finally, the aim of **Chapter 6** was to [1] quantify the seasonal physical loading of an MLS homegrown player shifting between multiple team settings and [2] explore MLS sport scientists' perspectives on the working dynamics and practices employed within their club to support player development during the youth-to-senior transition. The achievement of this study was twofold, including the collation of GPS data from a professional homegrown player for an entire MLS season followed by qualitative interviews with two sport scientists, working within the MLS organisation and charged with delivering applied sport science practices that aimed to support the transitioning professional player. Running a quasi-statistical analysis and an HCA, the quantitative and qualitative findings revealed how interconnected sub-systems within a professional soccer club creates a dynamic developmental environment for young professionals. The homegrown player was shifting between multiple team settings, which reinforces the need for tailored strategies that adapt to fluctuating demands inherent in professional soccer. By examining both physical loading data and the sport scientists' perspectives, this study underscores the fluctuating demands placed on homegrown players and the need for individualized support mechanisms within MLS clubs. These findings reinforce the importance of tailored developmental strategies that adapt to the dynamic nature of professional soccer, contributing to a broader evaluation of how MLS clubs can support player development during the youth-to-senior transition.

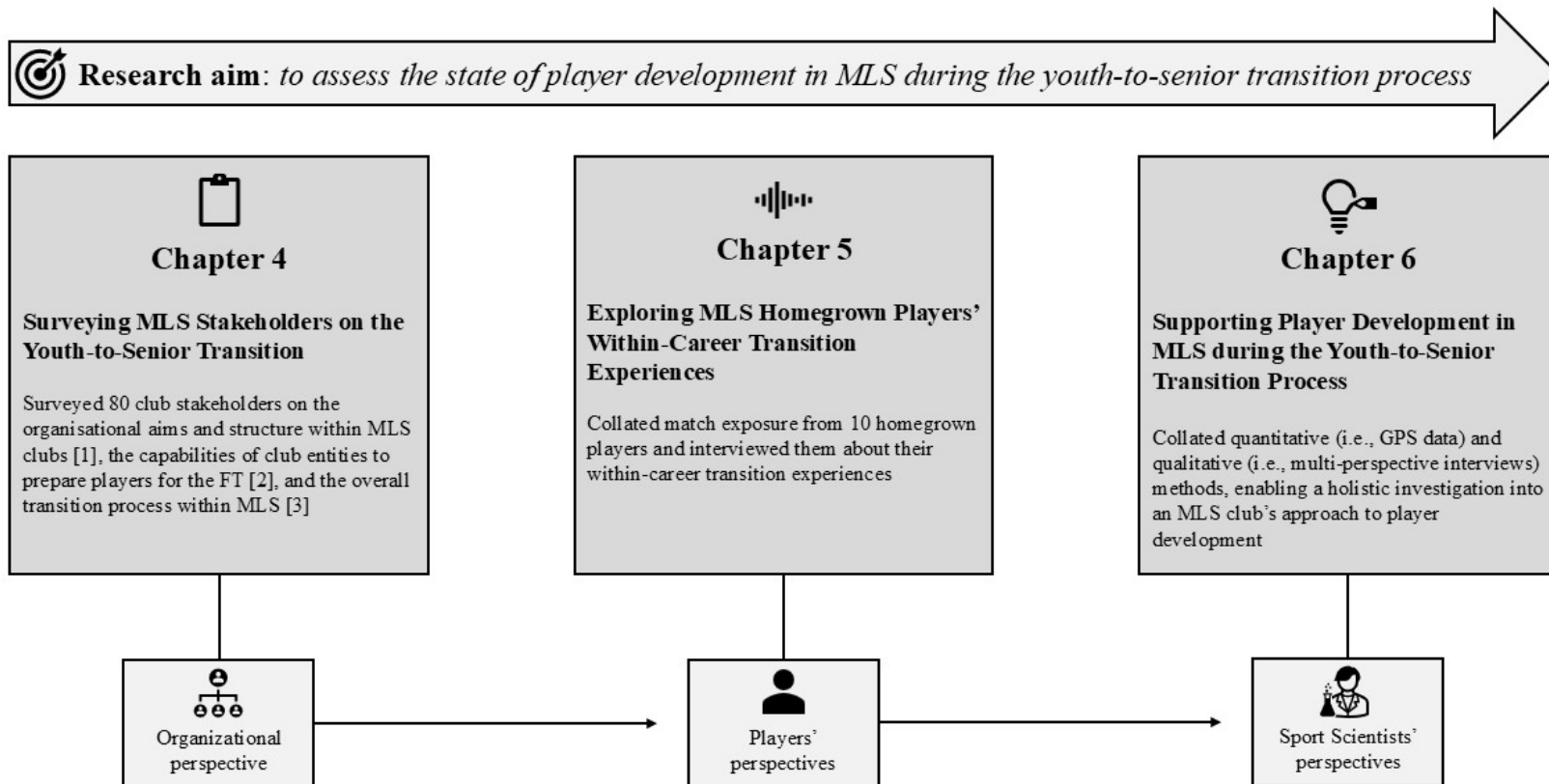


Figure 7.1. Schematic overview of the three empirical studies completed during the DSPortExSci programme.

7.3 General discussion

In professional soccer, the transition from a club's YA to FT is considered a critical phase in a player's development marked by considerable stress and uncertainty, greater psychological and physiological demands, and both an evolving status and identity within the organisational hierarchy of a club (Littlewood et al., 2019). The overarching aim of this thesis was to assess the state of player development in MLS during the youth-to-senior transition process. While MLS has undergone considerable structural expansion and organisational reform over the better part of the past two decades, relatively little academic inquiry has focused on how clubs support young homegrown players progressing from the YA program into the professional FT. Through three empirical studies, each offering a unique lens on organisational structures, player experiences, and applied sport science support, this thesis sought to advance academic understanding and inform professional practice. Taken together, the findings reflect the intricate and multi-layered nature of the transition process, shaped not only by MLS' institutional design nor simply just player readiness, but by the dynamic interplay of match exposure, physical loading variability, and the coordination of multidisciplinary support services. Ultimately, this thesis presents new evidence and conceptual insights into the mechanics that shape the youth-to-senior transition process in the North American professional soccer ecosystem of MLS.

7.3.1 Organisational alignment and structural fragmentation

The survey results in **Chapter 4** revealed a growing convergence across MLS organisations in their stated aims for the YA and RT entities. Club stakeholders overwhelmingly reported that both entities primarily aim to develop players for the FT, signalling that MLS has moved toward a long-term player development model comparable to professional clubs in European soccer (Ford et al., 2020, Relvas et al., 2010, Stratton, 2004). However, there remain inconsistencies in how MLS' development-oriented entities are governed and integrated into

the organizational hierarchy. For example, clubs varied in how they governed the RT, allocated leadership roles, and housed their three organisational entities, with some clubs stationing the FT, RT, and YA at separate training sites. These organisational features directly intersect with findings from **Chapter 5**, where players recounted the importance of integrated training environments to enable observational learning and social proximity to senior professionals, which together can potentially lead to more positive transition experiences across club levels (i.e., YA to RT and RT to FT).

Furthermore, while strategic alignment was apparent in club policy, its translation into day-to-day practice may be inconsistent. Survey respondents in **Chapter 4** highlighted that there may be or may not always be clear and effective communication between relevant staff when players are transitioning. This was further addressed in **Chapter 6**, where an MDT supporting a homegrown player heavily relied on technology solutions, such as an AMS, in conjunction with formal communication protocols to manage physical loading strategies and coordinate shifting players movement between two professional teams (i.e., FT and RT). The quality of these proceedings appeared contingent on club culture and organisational hierarchy, with the RT often operating in a subservient, reactive role to suit FT needs (Dowling et al., 2018). As such, the findings indicate that despite the existence of well-defined organisational aims, structural fragmentation caused by the hierarchical division and cultural differences between a club's results-oriented entity (i.e., FT) and its development-oriented entities (i.e., YA and RT) may undermine effective implementation of long-term player development strategies (Relvas et al., 2010).

7.3.2 Strategic use of reserves teams to bridge the gap

Across all three empirical studies, the RT emerged as a pivotal entity in managing the youth-to-senior transition. In **Chapter 4**, club stakeholders identified the RT as an entity that functioned and operated as a developmental team, participating in lower-tier domestic leagues

within the closed pyramidal system of the US. **Chapter 5** provided further evidence through the lived experiences of transitioning MLS homegrowns, who emphasized the RT's role in offering them critical match play opportunities, particularly when FT roster selection was limited. These homegrown players also articulated the benefits of match exposure in the RT, not simply just in terms of physical preparedness, but also in helping them grow their confidence, enhance tactical capabilities, and develop emotional coping strategies while missing out on opportunities in the FT.

Chapter 6 further confirmed the RT's developmental function, illustrating how a single MLS homegrown player sustained consistent seasonal physical loading via match exposure through the strategic use of the third division entity. When FT appearances declined for the homegrown player in the single case report, the club then prioritized continued development by allocating minutes via the RT, and supplementing with compensatory training sessions as needed. However, this process required extensive planning and negotiation across disciplines. The squad-shifting strategy described in **Chapter 6**, where players move between FT and RT settings sometimes within the same training microcycle, illustrates how the RT serves as both a bridge and buffer in player development. While such an organisational strategy can support player readiness for future FT competition programming and mitigate stagnation in development, it may also contribute to unplanned physical loading variability and logistical complexity.

Together, these findings highlight that the RT entity in MLS may occupy both a symbolic and strategic role, simultaneously serving as a 'proving ground,' 'fallback option,' and 'development accelerator.' The effectiveness of this dual role may be heavily influenced though by a club's interdisciplinary collaboration (e.g., sports science and medicine integration), FT head coach buy-in, and how consistent the core organisational aim of the RT is embraced within the broader player development strategy.

7.3.3 Match exposure, competition programmes, and transition readiness

Regular match exposure was identified as a critical component to supporting career progression and long-term player development across the empirical studies. In **Chapter 5**, players noted the importance maintaining a match rhythm to avoid ‘rustiness’ and described both the psychological and technical benefits of competing across FT, RT, and NT settings. In **Chapter 6**, GPS data showed seasonal accumulations in an MLS homegrown player were comparable to FT starters in an English Premier League club (Anderson et al., 2016), largely due to the club’s commitment to securing match exposure via domestic league play with the RT competing in MLSNP.

Yet the quality and nature of the competition also mattered. Players in **Chapter 5** critically appraised the comparative merits of MLSNP and USL Championship, indicating that the strength of opposition significantly shaped the perceived developmental value of these competition programmes. These perspectives align with broader concerns that developmental leagues may not consistently replicate the demands of FT soccer (Dowling et al., 2018, Prendergast and Gibson, 2022, Webb et al., 2020). Moreover, as **Chapter 4** revealed, ambiguity exists among club stakeholders regarding whether the current competition programming, particularly at the RT level, adequately prepares players for first division soccer in MLS.

NT duty provided opportunities to compete against top youth international opposition, but it also introduced further complexity. While players reported in **Chapter 5** that NT camps enhanced their confidence and offered emotionally supportive environments, **Chapter 6** highlighted the disruptive effect these domestic and international camp experiences can have on club loading strategies and continuity when transitioning full-time into the FT setting. The findings indicate that while international duty offers developmental and psychosocial benefits, it may also complicate the coordination of training cycles and prescription of player workloads.

These disruptions though may occur more often in MLS as the league does not observe the FIFA international match calendar (Mannix et al., 2025).

7.3.4 Multidisciplinary team coordination and the role of communication

The role of the MDT in managing transitioning homegrown players was explored in detail in **Chapter 6**, but its relevance extends across the thesis. In **Chapter 4**, club stakeholders reported that sport science, medical, and analytics professionals were often excluded from player selection decisions, despite their access to pertinent data and domain knowledge relevant to long-term player development initiatives. This disconnect was further underscored in **Chapter 5**, where players described limited access to multidisciplinary support services, particularly in the YA programme. Only upon reaching the FT did players report receiving individualized support, including nutritional provision, physical preparation, and recovery strategies.

In contrast, **Chapter 6** documented a highly coordinated MDT effort, supported by centralized data solutions (e.g., AMS) and routine communication procedures. For example, collaboration between FT and RT staffs involved daily performance meetings to review team and individual player schedules, physical loading, and prospective squad shifting strategies. Additionally, FT management, including the head and first assistant coaches along with the performance director and head of sport science collectively engaged in weekly discussions, outlining upcoming training microcycles, which highlights the extent to which successful transition outcomes hinge on sustained, interdisciplinary dialogue. Still, the study cautioned that such collaborate efforts are vulnerable to disruption by turnover in leadership positions (e.g., head coach dismissal) or misalignment in physical training culture (Murray, 2017).

Taken together, these findings underscore the importance of both formal and informal communication strategies within the MDT. The youth-to-senior transition is a socially embedded process shaped not only by a talented player's physical and technical abilities, but

also by relationships among club practitioners that determine how sporting-related decisions are made, information is shared, and players are supported across fast-changing contexts.

7.3.5 Limitations and future research

A central limitation throughout this thesis was the recruitment and utilization of relatively small sample sizes. In **Chapter 4**, only 80 respondents fully completed the online survey, a modest number given that hundreds of ‘player operations’ personnel are employed by MLS organisations on an annual basis. The survey was circulated near the midpoint of the MLS season, promoted via the business social media app, LinkedIn, for approximately 9 weeks, and reposted by several close colleagues working in MLS at the time. While the survey captured novel insights on player development practices and the youth-to-senior transition in MLS, any future research considering the deployment of online surveys for data capture must aim for larger and more representative sample sizes. In doing so, the research analyses could examine the differences in respondents working for the different club entities (i.e., YA, RT, and FT) and determine the strength of strategic alignment more systematically across MLS clubs, which has been previously investigated on a global scale (Gregson et al., 2022). Survey length should also be heavily considered, as participant fatigue and subsequent dropout may result from surveys requiring more than 10-15 minutes to complete.

In **Chapter 5**, the study employed a preliminary quantitative input study design to identify and recruit suitable participants. A purposive sample of 10 MLS homegrown players agreed to participate in semi-structured interviews. During the recruitment process, five other players who were approached politely declined to participate. While MLS’ Eastern and Western conferences were equally represented, all participants were contracted to US-based MLS clubs, excluding the perspectives of Canadian homegrown players at CF Montreal, Toronto FC, and Vancouver Whitecaps FC. Furthermore, the study’s ten participants were all US youth international players. This suggests that each participant may have been undergoing a relatively

successful transition experience into FT soccer, as participation with older age categories in youth international soccer may be an early indicator of a successful career at the senior level (Schroepf and Lames, 2018). Consequently, perspectives from players facing more challenging or unsuccessful transitions were not included. Future research should make deliberate efforts to recruit players who may be struggling to adapt to the demands of professional soccer, as well as those based in Canada, to provide a broader range of transition experiences.

Chapter 6 adopted a mixed methods single case study design after only one MLS club agreed to collaborate and serve as a gatekeeper for the purpose of this study. Despite efforts to engage four other MLS clubs, only one organization granted access to GPS data. Two clubs declined while the other two never responded to multiple email invitations and follow up phone calls. As such, the findings concerning seasonal physical loading, match exposure, and MDT coordination reflect the developmental philosophy and organizational working practices of a single MLS club. While the inclusion of two applied sport scientists provided valuable contextual information, perspectives from other club stakeholders, such as coaches, performance analysts, or sports medicine staff, could have provided greater interpretative depth and offered a more comprehensive account of the club's approach to transition planning. Further, the inclusion of more 'player operations' personnel from this single MLS club may have also enhanced the data saturation in the qualitative portion of this mixed methods study.

Accordingly, several avenues for future research are warranted. Comparative mixed method designs could examine working practices and decision-making process across multiple MLS organisations, offering insights into clubs' structural variability and effectiveness. Including cases of less successful transition outcomes is paramount, particularly among homegrown players with limited match exposures or acute and chronic injury histories, as these participants would offer a more balanced understanding of developmental trajectories. Longitudinal studies that track transitioning players across multiple seasons, including

transitions in and out of NT environments or loan spells with other MLS organizations or USL clubs, may further elucidate how young professionals in North America adapt to the changing circumstances in their careers. Additional research exploring the MDT dynamics, intra-club communication effectiveness, decision-making hierarchies in the varied club organizational structures may also inform more cohesive player development frameworks within MLS.

Ultimately, the findings from this thesis reinforce that player development during the youth-to-senior transition is a unique, non-linear process. Within MLS, it is shaped by the interdependence of club practitioners, different training environments, and the evolving organizational structures established in the recent decades. The extent to which MLS clubs can enhance transition experiences and outcomes may depend less on any single initiative, such as infrastructural upgrades and modifications, and more on the ability to coordinate strategically across club entities, align staff around shared objectives, and remain responsive to the individual needs of young, developing players.

7.4 Meta-reflections

As I enter the final stages of the DSportExSci programme, I reflect on my time as a professional doctorate student with an enormous sense of pride and relief. Over the last ~4.5 y, I have faced many challenges that have greatly contributed to my academic and professional growth. I will discuss and reflect upon some of these developments in the following subsections. I have also included a supplementary timeline of events that provide a backdrop to my experiences completing the DSportExSci programme and working full-time with the USSF.

7.4.1 Research skills

From the outcomes of the self-audit, one of the key focus areas for my development concerned the improvement of my knowledge base, particularly in relation to the subject knowledge and application of research methods for this thesis. Given that it has taken me over

four years to complete my doctoral thesis, I am not necessarily surprised by the volume of knowledge I have acquired pertaining to the youth-to-senior transition. Although, I am under no illusion that I now sit on some large trove of critical information which will subsequently increase MLS clubs' fortunes, developing more and better homegrown players who can be sold for large sums in the global transfer market. In fact, I conclude this thesis feeling even more overwhelmed by the significant gaps in knowledge that I am aware and unaware of. As such, [1] I know what I don't know, and [2] I don't know what I don't know.

More importantly though, what I feel more interested in delving into is the sense that I am exiting this programme with a broader understanding of the application of research methods and how different methodological approaches contribute to the generation of knowledge. Furthermore, over the course of the DSportExSci programme, I began to recognise more and more that reflection was not only a matter of evaluating my decisions but also a means of interrogating the frameworks and assumptions that had been underpinning my professional judgements. Hence, I gradually moved away from a predominantly outcome-focused approach, which was defined by efficiency or external recognition, to a process-oriented stance. This shift reflects a reflexive position where I started to develop a deeper form of self-awareness in both my academic research and applied work.

When I started the DSportExSci programme, I certainly subscribed to a positivist worldview due to my abundant consumption of quantitative academic literature, investigating developments in recovery techniques (e.g., Whitworth-Turner et al., 2017), physical performance assessment protocols (e.g., Buchheit and Rabbani, 2014), various monitoring practice insights (e.g., Kelly et al., 2020), and technology solutions (e.g., Bastida Castillo et al., 2018), which all together inundate the headspaces of many applied sport scientists working in the fast-paced world of HP sport. In 2018, however, I can recall first reading a commentary article, written by a former LJMU classmate on the topic of qualitative research methods

(Harper and McCunn, 2017). Little did I know at the time this commentary would later help me begin to shift my views on qualitative and mixed-methodological approaches when I later read it again in April 2021 whilst beginning writing early drafts of my research proposal for the first DSportExSci module.

Fast forward fifteen months to June 2022, I found myself finally posting my survey for **Chapter 4** after feeling forced to delay its release due to MLS' announcement in December 2021 that it was launching MLSNP. This evolution within the MLS ecosystem, albeit frustrating, motivated me to hit pause and patiently wait so that I could survey club stakeholders on this new domestic league and draw comparisons with USL's multidivisional competition programs. These circumstances highlight another focus area for my development, which were developing skills tied to research management, such as organizing a research strategy adaptable to the constraints and realities of HP settings (Bishop, 2008). As such, I was adapting the timeline of my first empirical study so that I could capture what I thought would be more meaningful data concerning significant change to the PPP in MLS.

During the first few weeks of the survey's release, however, I was shaken by the low number of participants who had completed it. This stark reality deflated my spirits while I was away in Tegucigalpa, Honduras, working at the CONCACAF U-20 Championships. Further, it left me frustrated with myself, feeling that while awaiting to release the survey I had spent too much additional time and energy, overanalysing the order of questions, fixating on the language use, and failing to recognize the number of questions would lead to participant attrition. In the end, the total number of participants ($n = 80$) restricted the ability to conduct statistical analyses comparing perspectives across different stakeholder groups (e.g., FT, RT, and YA).

Nevertheless, one positive outcome while conducting the stakeholder survey came to fruition during the analysis and early write-up stages. My findings showed that many Likert scale responses were neutral (i.e., neither agree nor disagree), indicating that club stakeholders

were undecided on matters related to professional RTs and competition programming within the US professional soccer ecosystem. Naturally, club stakeholders held this uncertainty due to the recent changes in the PPP as outlined in **Chapter 2**. This notion eventually prompted me wanting to seek players' perspective on the youth-to-senior transition process, as the evolving MLS ecosystem meant they were facing a multitude of shifting factors that were impacting their long-term development, and I wanted to capture a snapshot of their lived experiences by conducting qualitative semi-structured interviews as seen in **Chapter 5**.

For the project planning that followed, I began my foray into mixed methods research, exploring the methodological pluralism of academic inquiry, and in the process of muddling my brain over the theoretical and epistemological concerns arising from the divisions between quantitative and qualitative researchers (Greene, 2008), I slowly began to piece together that the 'paradigm issue' was indeed fighting for my attention and allegiance (Greene and Caracelli, 1997). For example, I recall being very adamant with Dr Simon Roberts that the empirical study I was preparing was following a variant of the explanatory sequential mixed methods, specifically a 'preliminary quantitative input design' (i.e., *quan* + QUAL), whereby the supplementary quantitative method provides input to the core qualitative method to inform a purposive sampling procedure (Morgan, 2017). While this example highlights that I was perhaps getting lost in research methods minutia, it reinforced for me the effort I was making to try to wrap my head around both new and existing language being employed in mixed methods research (O'Cathain, 2015). This realisation marked a key turning point in my identity as a research-practitioner. No longer did I simply select methods for their perceived rigour or familiarity, but I started asking *why* a method aligned with a particular epistemology, and how my own professional biases might shape the questions I ask.

One key challenge I was running into, trying to become a well-versed research practitioner in the epistemological, ontological, and methodological dimensions of mixed

methods research, was my full-time employment where I earned a promotion, delivering sports science support for two key age categories (i.e., U-20 and U-23). Outside of camp, I was tasked with supporting new federation initiatives and leading HP department projects. When in camp, I was often unable to dedicate time to reading or writing, as my workdays started at six or seven o'clock in the morning and ended around ten o'clock in the evening. Further, by being on the road for 10–12-day training camps ($n = 17$) and month-long international tournaments ($n = 4$), I was experiencing multiple prolonged disruptions in my learning process, which stymied my ability to fully grasp key concepts related to mixed methods research. This subsequently pushed back project timelines and forced me to reset my goals in completing the empirical studies and MMSR for this thesis. In these moments, I needed to perform self-check-ins and remind myself that my overall research strategy and the accompanying project planning process needed to be adaptable to the changing circumstances of my own professional work at the USSF. For example, less than one month before the 2024 FIFA U-20 World Cup, soccer's world governing body (i.e., FIFA) announced it was relocating the tournament from Indonesia to Argentina, which meant the months of planning, including hotel reservations, training site operations, travel logistics, jet lag protocols, menu planning, and physical periodization strategies were now void. Consequently, my attention was quickly and temporarily drawn away from finalizing an ethics application for the empirical study in **Chapter 6**. Weeks later though, I found myself in the small city of San Juan, Argentina mustering the energy to respond to feedback on the same application from the ethics committee in the early hours of the morning during the group stages of the tournament.

Another key challenge, or setback, concerning the empirical study in **Chapter 6** was the handful of MLS clubs declining or not responding to my requests to collaborate on a mixed methods multiple case study design. This required further alterations to my original research strategy and I was left reeling from the rejection by these organisations, as I felt I had garnered

the trust and respect of several individuals in senior leadership roles over recent years from our communications before, during, and after FIFA windows, ensuring their players had a seamless experience during the CIT process (Oliva-Lozano et al., 2025). I was fortunate though to eventually identify an MLS organization that granted me with access to both quantitative and qualitative data to conduct a mixed methods single case study. In the end, what I developed as a research-practitioner, working full-time for an NGB, was resiliency and adaptability in response to the challenges and setbacks posed during a prolonged research project planning process. This resiliency and adaptability will need to be transformed to suit my new role, which entails managing a large cohort of full-time and part-time staff who are based across the US.

The final focus area for my development was the communication and dissemination of my research findings. This was partially achieved through the presentation I gave of the quantitative data from **Chapter 6** at the 2024 BASES Student Conference and via the publications of **Chapters 2 and 4** in *Soccer & Society* and *Science and Medicine in Football*, respectively. At present, both **Chapters 5 and 6** are also under review with the *Journal of Sports Sciences* and the *International Journal of Sports Science and Coaching*, respectively. Although, research publications are not the main aim of a professional doctorate, it was important to me to try to get my doctoral research published. Further, I was keen to contribute to the sports science literature by writing about North American professional soccer. It has been incredibly rewarding to see the commentary article in **Chapter 2** garner over 2000 views since its online publication in September 2024 and be positioned at the top of the journal's 'most read list.' Furthermore, it has been a good experience to learn and witness the length of time required to publish peer-reviewed papers and go through the process of responding to reviewer comments. Looking ahead, I am excited and motivated to continue being involved in future publications, collaborating with academic researchers and doctoral students alike who hold

similar interests in mixed methods methodologies and exploring research opportunities in North America.

7.4.2 Professional skills

Beyond the development of my research skills, the past ~4.5 y has also led to further advancements in my professional skills. In the US, because full-time sport scientists are still relatively rare and the development pathways are limited (Gleason et al., 2024a, Gleason et al., 2024b), I decided to complete the direct application for the BASES accreditation shortly after submitting my self-audit, research proposal, and training plan for the first module of the DSportExSci programme. Although there is debate surrounding the utilization of competency-based models for accreditation schemes (Collins et al., 2015), I completed the application process because I wanted to gauge whether I could demonstrate sufficient industry knowledge and experience. When I received the email in April 2022 that I had successfully earned the accreditation after assembling a 90-page application over a three-month period, I was filled with an immense sense of pride, and it gave me a boost in confidence as I was starting my new role as a senior sport scientist. I would be leading the sport science provision for the U-20s that was preparing for World Cup and Olympic qualifiers. Over the next ~2.5 y, I was fortunate to get the opportunity to attend both the 2023 FIFA U-20 World Cup and the 2024 Paris Olympic Games. What contributed to my success as a senior sport scientist was my strong ability in *executing*, which means I make things happen, according to CliftonStrengths. When I look back on the results from this online assessment tool, which I completed in 2021 as part of my self-audit, there are three subthemes identified that really resonate with me as I complete this reflection process on the development of my professional skills.

First, the *responsibility* theme, which was the top theme listed, highlights the psychological ownership and commitment I have demonstrated the last ~4.5 y, working to complete the DSportExSci programme while also working full-time for the USSF. I believe

this theme also resonates with the immense sense of commitment I feel towards supporting the USSF's preparations for the 2026 FIFA World Cup, as well as the overall federation mission, which is to make soccer the preeminent sport in the US. This commitment has helped motivate and energize me over the last ~4.5 y to push myself, at times, to the limits, which certainly led to moments of burnout. Whether it was directing certain HP projects, supporting federation initiatives, organizing BASES webinars, or fast-tracking certain aspects of this thesis, I was determined to give my all. I believe this commitment and effort is partly why I have been promoted, assigned the remit, and given the trust to grow the sport science discipline within the HP department, manage multiple full-time ($n = 6$) and part-time practitioners ($n = 20$), and spearhead various initiatives related to the opening of US Soccer's National Training Center in Atlanta, such as the layout design of a 11,000 square foot weight room.

Second, the *deliberative* theme, which was listed third, describes the serious care I take when making decisions. This theme may be related to some behavioural tendencies tied to perfectionism that were uncovered over the course of the professional doctorate (e.g., survey design), which I was unaware of before starting this programme. However, it has served me well in my previous roles, as international soccer is an exercise in planning, logistics, and fatigue management for both players and staff. Furthermore, I recognize that a positive development for this strength came about when Dr Martin Littlewood introduced me to the 'Eisenhower Matrix.' This task management tool, which is designed to divide and distinguish tasks into four distinct quadrants (i.e., Do, Delegate, Schedule, and Delete), improved my practices in prioritization of tasks and time management, which in turn helped me sharpen my performance and decision-making when completing small urgent tasks or large important projects. By adopting the 'Eisenhower Matrix' as a weekly and daily planning exercise, I was also able to improve my ability in balancing my academic and professional workloads and deliver on what was needed from each domain. Nevertheless, I am relieved to be shedding the

psychological burden of feeling the need to complete my professional doctorate thesis from my headspace.

Finally, the *relator* theme, describes people who enjoy close working relationships with others and find deep satisfaction in working hard with their peers to achieve a common goal. This theme captures the energy and drive I feel when working with many of my colleagues at the USSF, as well as my academic supervisors at LJMU. In the latter, I have a team of supervisors who have helped me navigate the world of academia, supporting me from the ethics application stage all the way through to the peer-review and publication stage. For this, I am very thankful for their support and for pushing me to get my doctoral research published. In the former, I have had the opportunity to share incredible life experiences with wonderful players and staff (i.e., coaches, athletic trainers, physical therapists, physicians, administrators, equipment operators, communications officers, etc.) during the World Cup and Olympic cycles. I have also had a wonderful boss over recent years at the USSF in Rick Cost who motivated and supported me to work hard in both my professional and academic work. As discussed in my self-audit, I believed there could be a significant benefit in having a mentor who I could sit down with often to discuss my experiences and career development in the HP sport profession. I got that in Rick, and I am very grateful for both our friendship and his mentorship over the last ~3.5 y. Now in my new role, it is my obligation to mentor and support the development and reflexive growth of others who work as sport scientists in the extended and youth NT programmes at the USSF. This is an enormous challenge, particularly as the USSF has been and still is undergoing an incredible period of transition. All I want to do is try my hardest to support my colleagues in the months to come when the federation relocates to Atlanta and works to establish new standard operating procedures in its new permanent home.

As I conclude this chapter and this thesis, I recognise that my academic and professional growth over the past ~4.5 y has not just been the development of new skills and knowledge.

Rather, I have also been able to strengthen the depth and structure in my reflective capacity. I now approach challenges and problems differently. I no longer approach problems, or questions, with just an acumen for technical problem-solving, but have honed an ability to analyse the underlying assumptions, contexts, and stakeholder dynamics that shape outcomes. This meta-reflective stance, considering not just what I learn, but *how* I learn will guide my professional development far beyond this programme. As I look ahead to the challenges and opportunities that await me in the near future, I am excited to see where my career will take me and discover how I will navigate my own within-career transitions.

Chapter 8

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Chapter 9

Self-Audit, Research Proposal, and Training Plan

9.1 Overview

This chapter provides evidence of the self-audit, research proposal, and training plan that were completed in the first module of the DSportExSci programme (i.e., 8004 SpoSci).

9.2 Self Audit

9.2.1 Professional Background

Athletes frequently describe transitioning from youth to senior sport as the most challenging period in their careers (Stambulova et al., 2009). In my current and former professional roles, working as a performance coach and sport scientist in the US professional soccer ecosystem (Figure 9.1), I have witnessed elite youth academy players either successfully or unsuccessfully cope with the demands of first team training, elite competition, and life in general during this career transition period. Being embedded day-to-day in different soccer environments for the last ~6.5 years, has exposed me to the game's challenges and complexities on and off the field that are inherent in the American soccer ecosystem. My professional experiences to date suggest that what often exacerbates this transition period is misaligned aims in athlete development. Although empirically un-tested, it leaves me to question current practice here in the United States. Hence, in the words of legendary Premier League head coach, Ted Lasso, “We’re talking about practice.”



Figure 9.1. Career path and timeline (2014 – 2021) working in the US professional soccer ecosystem.

The professional doctorate has been an emerging form of knowledge production in higher education in recent decades with a focus on the development of research in professional practice manifested from the confluence of the student's workplace, profession, and university (Lee et al., 2000). Historically, mode 1 knowledge has been pursued and generated within a disciplinary context by the traditional PhD, arising from an academic agenda that is governed by laws and a tightly fixed methodological approach. (Maxwell, 2019). In contrast, the professional doctorate lends itself towards the generation of mode 2 knowledge production, by addressing complex problems or issues which occur in professional practice, and as such can draw upon a range of transdisciplinary research approaches (Maxwell, 2019).

Athlete development is a complex, transdisciplinary endeavour that encompasses stakeholders from sport science, sport medicine, talent identification, and coaching. It has become an area of increasing interest for professional clubs and NGBs due to the various approaches employed to develop athletes from different contexts around the globe (Sotiriadou and De Bosscher, 2017). Pursuing doctoral research at LJMU alongside my current role with the USSF provides me a terrific opportunity in the sport science profession to generate mode two knowledge concerning athlete development in the context of the US soccer landscape. I believe that returning to LJMU is the natural, next step in my career because not only will it elevate me in my professional pursuits, but it will also support me in delivering high level, practice-based research that will impact the overall standards of athlete development in professional soccer in the US.

9.2.2 Reflective Practice

Reflective practice should be a fundamental feature in the work conducted by sport and exercise science professionals (Knowles et al., 2014). It is an approach to training and practice that can help practitioners explore their decisions and experiences, as well as learn from the tacit knowledge in action they use in their daily work environments, thereby increasing their

understanding of themselves and their practice (Knowles et al., 2007). The sport science professional who embraces the right attitude to reflective practice will access and understand this tacit knowledge in action and make a significant contribution to both their professional and personal development (Anderson et al., 2004, Knowles et al., 2007).

To set the scene, I feel I have been in a perpetual state of reflection during the Covid-19 pandemic that began near the end of 2019. Four and a half months prior to lockdown, I travelled to Brazil for the 2019 FIFA U-17 World Cup with the most-experienced U-17 MNT in the programme's history, including thirteen players with professional minutes in MLS and USL. Unfortunately, the team performed below average and were subsequently knocked out of the tournament in the group stage. Afterwards, a review of the U-17 tournament, which was an opportunity for reflection, occurred between myself and former supervisor more than one month after my return in December 2019. Despite reflective practice offering a framework to facilitate effective supervision (Anderson et al., 2004), this review and its reflective process with my supervisor was unacceptable. Its siloed approach involving only sport science personnel, along with its poor timing, was inadequate, ineffective, and too late, leaving the process to feel insignificant. Hence, context and timing for reflection are integral to the process (Trelfa and Telfer, 2014).

Reflective practice does not have to be undertaken as a solitary activity, but rather it can be a shared one (Knowles et al. 2007), as sharing experiences with others publicly may create a forum to facilitate an exchange of viewpoints (Knowles et al., 2001). Approaches of capturing reflective practice in a group setting include communities of practice and reflective conversations (Knowles et al., 2014). Over the 2019 Christmas period, I read about the U.S. Navy SEALs who hold 'After-Action Review,' or AAR, which are routine gatherings that take place immediately after each mission or training session, where "team members name and analyse problems and face uncomfortable questions head-on" (Coyle, 2018, p. 99). It seems

AAR holds many of the key characteristics of reflective practice and follows an approach like those listed by Knowles and colleagues (2014). AAR seems to be purposeful, complex, question-driven, and results in change (Knowles et al., 2014), and its timely, structured approach, like reflective practice, allows for more systematic reflection and prevents military servicemen and women from simply mulling over an experience (Knowles et al., 2001). Reading about AAR resonated with me because it was in stark contrast to the review process that I experienced in 2019. I strongly felt that all sporting departments, including sport science, sport medicine, talent identification, coaching, administration as well as key executives should have met to discuss the events, operations and decision-making that had transpired during the previous two years of the U-17 MNT cycle. It would have ultimately provided my colleagues and I a valuable opportunity to evaluate and reflect on a significant event in our careers.

The following year in 2020, US Youth National Team (USYNT) programming naturally was cut due to Covid-19, and I found myself with more time and opportunity to further reflect independently on the previous world cup cycle, my previous professional roles in MLS and USL, and analyse the current state of player development in the US soccer landscape. For the U-17 MNT, there had been lack of stability due to the age group having four different head coaches over the course of the two-year cycle, which hurt the team culture, as well as hamper the staffs' ability to work efficiently. However, I have witnessed similar adversity in the club setting, which I felt also impacted player development negatively. I can recall simple operational mishaps with two previous employers that were guilty of bungling sport science support for players simply due to miscommunication. One club was logging consecutive "double days," or two session per day (i.e., training with the first team in the morning and youth academy in the evening), with a young player so that it could certify his homegrown player status. I raised concerns over the player's workload with the first team staff but was dismissed as I was merely a youth academy staff member. At another club, despite being a first

team staff member and providing input to various department leads, on numerous occasions young players would train in multiple environments in a single day, starting with the reserve team in the early morning, moving onto first team training shortly after, and finishing with their academy age-group in the afternoon. Fortunately, that club operated both the first team and youth academy in the same facility. In contrast, another employer's first team was over 300 miles away from its affiliate reserve team, which presented other unique, logistical challenges in managing players' health and performance. All in all, a common issue I found in these experiences at the club and international level was simply operational mismanagement due to a lack of insightful planning, especially during critical periods in young players' careers.

While the concept of reflection is often conflated with reflective practice (Fook, 2019), I still feel the year of reflection on my experiences with various professional clubs and the USYNT program created meaning and knowledge. I also believe it helped guide me to my decision to apply to the professional doctorate program at LJMU. After yearlong reflection, I knew I wanted to better understand the youth-to-senior transition, unravel its complexity, and find solutions to problems that face young domestic players trying to progress to professional soccer in the US. Ultimately, I knew that LJMU, a world leading football science institute, was the right place for me to conduct this research project.

Fast-forward to 2021, our Professional Doctorate in Applied Sport and Exercise Science (DSportExSci) cohort has been tasked with conducting our own reflective practice through a self-audit exercise as part of our training plan submission. Some authors question whether an exercise such as this is damaging the potency of reflective practice and its original purpose because it pits “reflection *as* learning versus reflection *for* assessment,” which may negatively impact student understanding and engagement (Trelfa and Telfer, 2014, p.50). I, myself, find this task an ordeal to write down and explain my understanding of reflective practice. However, I hope my honest attempt to share a recent personal exploration that

transpired over several months before and during the Covid-19 pandemic has revealed not only my rationale to apply to LJMU, but also my understanding and attempts to utilize reflective practice. Finally, I believe the self-audit exercise will help me pinpoint strengths that will support me in my research project, while also identifying gaps and areas for growth and development. The following sub-sections remaining in Chapter 2 outline the evaluation tools selected and provide brief discussion on key findings during my reflective practice.

9.2.3 Research Development Framework

To kick-off the self-audit, our DSportExSci cohort was introduced to the Vitae Research Development Framework (RDF) during the induction and enrolment week back in January. The RDF is a British professional development framework geared towards researchers in higher education. Built from empirical data, the RDF serves as a tool to help evaluate and plan one's growth as a research professional. Under the framework's four domains and twelve sub-domains, there are 63 descriptors containing between three to five phases that represent distinct stages of development or levels of performance, which a researcher uses to benchmark themselves against. As a neophyte researcher, I feel there are several areas and opportunities for growth and development, so I was honest and critical with myself when benchmarking the appropriate phases of where I am for each descriptor respective to the sub-domain and overarching domain.

The first descriptor, subject knowledge, I benchmarked as a two. Although I have worked in professional soccer for 6.5 years, I have only recently been systematically researching the youth-to-senior transition literature since the start of the professional doctorate. It is predominantly a sport psychology-led subject area and one which was not covered during my undergraduate coursework despite sport psychology being a core module in my exercise science program. Also, while I have researched the subjects of talent and athlete development extensively in my professional work, I have not approached the subject for academic purposes,

where the expectations in collating, translating and presenting research will be significantly greater. Other subject areas pertinent to my research project may include periodization and physiology, which I feel greatly confident in as my professional role requires me to utilize both day-to-day for theoretical and practical means in and out of USYNT camps. Language is another descriptor that I earmarked as a two because of my keen desire to adopt the correct nomenclature, or technical language, in any space that I find myself working in, and being an American citizen living in a post-Trump presidency era, I believe the correct use of language matters today more than ever. Further, from a career development standpoint I studied and minored in German for my undergraduate degree and use the language often in club correspondence concerning German-born American players competing with 1. and 2. Bundesliga youth academies. It was also a useful language skill to have while building a strong relationship with the former U-17 MNT head coach, a German-speaking Swiss professional who previously managed FC Basel through a prolific Champions League campaign in 2017-18. Having a common, shared language is vital to enhancing trust, which is necessary for allowing effective interdisciplinary work in both professional and academic settings (Bracken and Oughton, 2006). As for the remaining descriptors under Domain A, I benchmarked them under phase one. While I utilize a specific knowledge base with relevant cognitive abilities and creativity in my professional work, translating this into high level research for a professional doctorate after more than 7 years away from academia will be a significant challenge and an opportunity for growth as I develop more into a competent researching professional.

Domain A: Knowledge and intellectual abilities

A1: Knowledge base	1	2	3	4	5
1. Subject knowledge					
2. Research methods - theoretical knowledge					
3. Research methods - practical application					
4. Information seeking					
5. Information literacy and management					
6. Language					
7. Academic literacy and numeracy					
A2: Cognitive abilities	1	2	3	4	5
1. Analysing					
2. Synthesising					
3. Critical thinking					
4. Evaluating					
5. Problem solving					
A3: Creativity	1	2	3	4	5
1. Inquiring mind					
2. Intellectual insight					
3. Innovation					
4. Argument construction					
5. Intellectual risk					

Figure 9.2. Domain A: Knowledge and intellectual abilities. Under the 3 sub-domains, each descriptor is graded from phase 1 – 5, which represent distinct stages of development or levels of performance within that descriptor (Phase 1 = entry; Phase 5 = expert).

In Domain B, I believe many of the descriptors under personnel effectiveness suit me and will serve me well in becoming a competent researching professional. Hence, I benchmarked myself as a three under integrity and self-confidence. I have advised many colleagues in and outside of the USSF on both professional and personal matters concerning the challenges of working in elite sport. For myself, I have a network of support that I have built myself over the years, which is made up of family, friends, and professional colleagues, and will now also include academic colleagues. Self-management and all its descriptors, however, are still areas where I feel I need to improve upon to be successful with my research project and the progression that I want in my own professional career.

Domain B: Personal effectiveness

B1: Personal qualities	1	2	3	4	5
1. Enthusiasm					
2. Persistence					
3. Integrity					
4. Self-confidence					
5. Self-reflection					
6. Responsibility					
B2: Self-management	1	2	3	4	5
1. Preparation and prioritisation					
2. Commitment to research					
3. Time management					
4. Responsiveness to change					
5. Work-life balance					
B3: Professional and career development	1	2	3	4	5
1. Career management					
2. Continuing professional development					
3. Responsiveness to opportunities					
4. Networking					
5. Reputation and esteem					

Figure 9.3. Domain B: Personal effectiveness. Under the 3 sub-domains, each descriptor is graded from phase 1 – 5, which represent distinct stages of development or levels of performance within that descriptor (Phase 1 = entry; Phase 5 = expert).

Moving onto Domain C, I benchmarked myself at phase three for health and safety due to the extensive knowledge and experience I have accrued during the Covid-19 pandemic. In 2020, I was involved in designing Covid-19 resources for U.S. Soccer’s Play On initiative and was part of a large inter-department committee tasked with building the Federation’s Covid-19 Manual, which helped return the U.S. National Teams to holding camps and events. In addition, I also assisted in a previous role with designing and reviewing an emergency action plan with medical professionals for a USL stadium and training site. For ethics, legal requirements, and confidentially, I have fundamental knowledge on the importance of collecting participants’ consent and storing data securely. I gained experience with this while completing both my undergrad and postgrad degrees, as well as more recently while leading the anthropometric data collection for U.S. Soccer’s Bio-Banding Tournaments in Texas and California in 2018 and 2020, respectively. As for research management, I believe this is an area where I have a lot of room for growth and my supervisory meetings are providing me with an important

touchpoint in this area because it helps me keep on track with strategic planning and task execution as I write my research proposal and training plan. I think this will be key as I carry out my research design over the course of the professional doctorate.

Domain C: Research governance and organisation					
C1: Professional conduct	1	2	3	4	5
1. Health and safety					
2. Ethics, principles and sustainability					
3. Legal requirements					
4. IPR and copyright					
5. Respect and confidentiality					
6. Attribution and co-authorship					
7. Appropriate practice					
C2: Research management	1	2	3	4	5
1. Research Strategy					
2. Project planning and delivery					
3. Risk management					
C3: Finance, funding and resources	1	2	3	4	5
1. Income and funding generation					
2. Financial management					
3. Infrastructure and resources					

Figure 9.4. Domain C: Research governance and organization. Under the 3 sub-domains, each descriptor is graded from phase 1 – 5, which represent distinct stages of development or levels of performance within that descriptor (Phase 1 = entry; Phase 5 = expert).

For Domain D, I benchmarked collegiality and team working at phase two and three, respectively. In camp, I work as part of a multidisciplinary support team, including physicians, physical therapists, athletic trainers, massage therapists, nutritionists, and performance analysts, who all contribute to athlete development in a HP environment. Also, spending extended periods of time away from home, often in a foreign country, can be difficult and challenging for all involved. I believe that I have a positive, upbeat personality who can raise the group’s mood and performance when long training camps and/or international competitions are dragging, and staff are missing home. Next, communication and dissemination are all earmarked for phase one, as I have a general understanding for all three items. The latter item, publication, is one that I find very daunting, but I hope to work hard with my supervisory team and turnover work from my research project that can eventually be published. Teaching is

another area that I put down as phase one because I have delivered modules to soccer coaches and academy directors in U.S. Soccer's coaching education program, and I would like the opportunity to present my research project to LJMU undergraduates, as well as any interested students and professionals in the United States. For the last two items, society and culture, and global citizenship, I placed myself in phase two. For the latter, I am a 'third-culture individual,' having lived abroad in Europe twice before attending university. This life experience has made me appreciate a more global view when tackling problems. Therefore, I believe pursuing this professional doctorate abroad, rather than a traditional PhD in the US, will be better for my professional development because working with my predominately British supervisory team will provide me with different perspectives that will help me chart the right direction for this research project.

Domain D: Engagement, influence and impact

D1: Working with others	1	2	3	4	5
1. Collegiality					
2. Team working					
3. People management					
4. Supervision					
5. Mentoring					
6. Influence and leadership					
7. Collaboration					
8. Equality and diversity					
D2: Communication and dissemination	1	2	3	4	5
1. Communication methods					
2. Communication media					
3. Publication					
D3: Finance, funding and resources	1	2	3	4	5
1. Teaching					
2. Public engagement					
3. Enterprise					
4. Policy					
5. Society and culture					
6. Global Citizenship					

Figure 9.5. Domain D: Engagement, influence and impact. Under the 3 sub-domains, each descriptor is graded from phase 1 – 5, which represent distinct stages of development or levels of performance within that descriptor (Phase 1 = entry; Phase 5 = expert).

9.2.4 CliftonStrengths

The CliftonStrengths online assessment was the final evaluation tool that I identified and selected for my personal self-audit because its application has been deemed suitable for both work and academic settings (Asplund et al., 2007). Designed by the Gallup Organization, widely known for its U.S. political polls, CliftonStrengths was developed through rational and empirical processes in the 1990s under the leadership of Donald O. Clifton as an objective measure of personal talent (Asplund et al., 2007). By identifying my specific personal talents using CliftonStrengths and its supporting materials, I can learn how to build upon the talents identified to help develop my strengths within my current roles as a performance coach, sport science practitioner and professional doctorate student. The top five distinct themes of talent in my CliftonStrengths results were Responsibility, Context, Deliberative, Relator, and Learner, respectively (Figure 9.6).

The pursuit of my professional doctorate is naturally both a professional and personal endeavor. This outlook aligns well with the Responsibility, Deliberative, and Learner distinct themes that were identified by CliftonStrengths. First, the Responsibility theme pinpoints my deep sense of dedication and desire towards attaining the professional doctorate award. Second, the Deliberative theme highlights the serious and careful thought process I lead when making decisions and tackling project. However, these strengths which correlate with my personality can overwhelm me. For example, the challenges and adversity that come with the academic rigor of the FHEQ-level 8 weigh heavily on me and have led me to question my abilities. However, as alluded to by the program leader, I need to be open and honest when I am struggling to avoid my research project failing. Rather than be reluctant to speak up about my reservations, I feel I have been forthright about my concerns with my supervisory team in our meetings during the early planning stages of this professional doctorate. The Learner theme, identified by the CliftonStrengths, should help me circumvent these concerns, as it highlights

my intrinsic motivation to learn and continuously improve. Under the Relator theme, CliftonStrengths suggests that I find a mentor who has lived and worked in my professional community for a long time because I can maximize my potential by listening to this person's experiences, which may spark my thought processes and accelerate my learning. Consequently, I believe the suggestion from CliftonStrengths underscores the significance for me to find the right external advisor who can help elevate my research project and hopefully my career.

CliftonStrengths

1 Responsibility

People exceptionally talented in the Responsibility theme take psychological ownership of what say they will do. They are committed to stable values such as honest and loyalty.

2 Context

People exceptionally talented in the Context theme enjoy thinking about the past. They understand the present by researching the past.

3 Deliberative

People exceptionally talented in the Deliberative theme are best described by the serious care they take in making decisions or choices. They anticipate obstacles.

4 Relator

People exceptionally talented in the Relator theme enjoy close relationships with others. They find deep satisfaction in working hard with friends to achieve a goal.

5 Learner

People exceptionally talented in the Learner theme have a great desire to learn and want to continuously improve. The process of learning, rather than the outcome, excites them.

You lead with **Executing** CliftonStrengths themes.

Executing themes help you make things happen.

Influencing themes help you take charge, speak up and make sure others are heard.

Relationship Building themes help you build strong relationships that hold a team together.

Strategic Thinking themes help you absorb and analyze information that inform better decisions.

Figure 9.6. CliftonStrengths from Gallup. The top five distinct themes are reported to be the most powerful natural talents.

9.3 Research Proposal

9.3.1 Introduction

In 2026, the FIFA World Cup will return to North America and be hosted by Canada, Mexico, and the United States. Despite a complex and chaotic sport development model in US soccer, the country has witnessed incredible participation and commercial growth at the youth and professional levels, which have emboldened both U.S. Soccer and Major League Soccer to bolster their talent identification and development processes to become more competitive in the global game. While there is still opportunity for improvement in US soccer to better nurture top talent, a youth movement has already been taking shape in the country. From 2017 to 2021, MLS increased its number of US homegrown players aged 20 or younger by 45%, from 67 to 97 players (Figure 9.7). Just last year, twelve homegrown players aged sixteen and younger signed professional contracts with MLS clubs (Lisi, 2020). Meanwhile the USMNT's player pool has been steadily trending younger, as more young Americans get opportunities to compete not only in MLS, but also in the 'Big Five' European domestic leagues (i.e., English Premier League, French Ligue 1, German Bundesliga, Italian Serie A, and Spanish La Liga) (Goff, 2020).

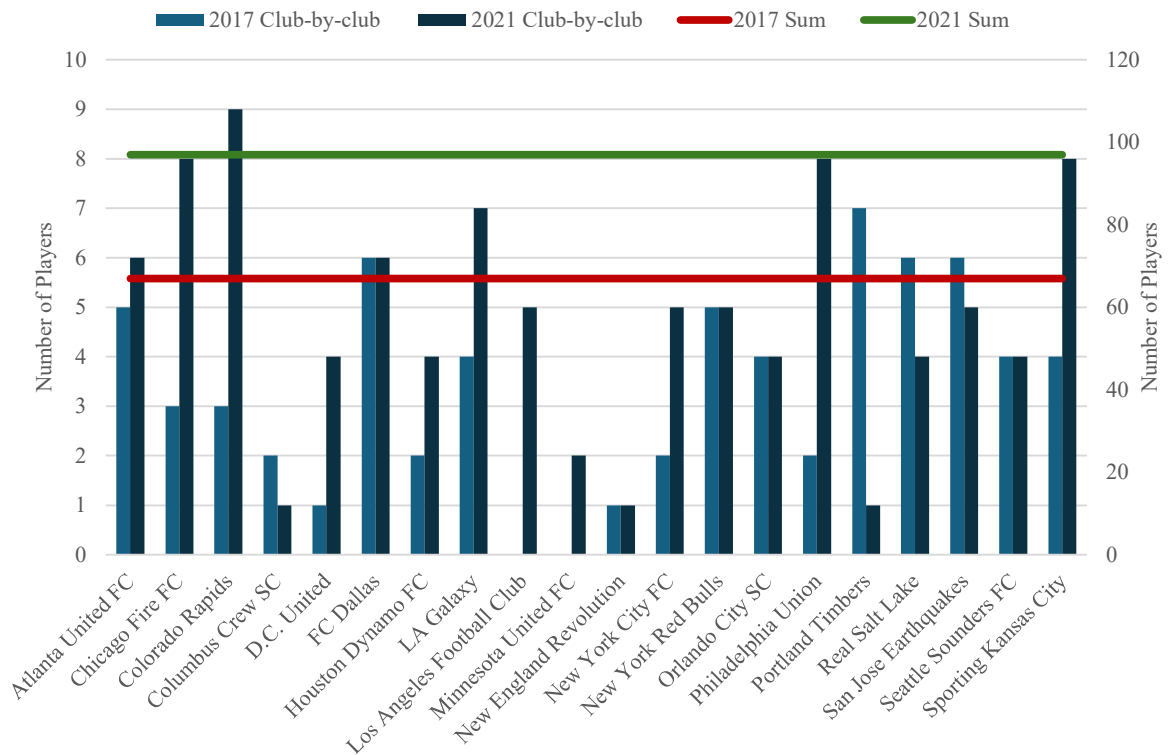


Figure 9.7. The change in under-20 US domestic homegrown players in MLS rosters from the 2017 to the 2021 season. **Notes.** Roster data obtained from Transfermarkt.us.

In professional soccer, the transition from youth to senior level is one of the most defining moments of a player's career (FIFA, 2021b). However, this within-career transition, exiting the academy and joining the first team, is also one of the most challenging in players' careers and may span across several years, during which players will face a continual period of stress and uncertainty (Drew et al., 2019, Stambulova et al., 2009). Consequently, some young players will thrive, while most will struggle to adapt and cope during the transition (Richardson et al., 2013), and may subsequently dropout out of the sport prematurely (Stambulova et al., 2009). This poses a major challenge to stakeholders charged with successfully progressing talented young players into professional first team soccer. The development of youth players into professional (and national team) adult players is a long-term process (Figueiredo et al., 2014a) that involves a systematic combination of coaching, multidisciplinary support, training, and competitive match play (Williams et al., 2020).

However, as noted by Sarmiento et al. (2018), despite increasing research interest in talent development, the best scientific approaches to successfully developing elite soccer players remain unclear. It should behoove both professional clubs and NGBs to explore a range of factors that influence the transition period and find valuable solutions to help support talented young players to enter and succeed at the professional level (Stambulova et al., 2017). Problems can emerge though if club and national team interests are not aligned in their approaches to improving elite youth development (Nesti and Sulley, 2015). With the 2026 FIFA World Cup on the horizon, the youth-to-senior transition should become an increasingly more important focus for both the USSF and MLS in which to investigate and collaborate on.

9.3.2 Youth-to-Senior Transition Phases

Two theoretical frameworks have been predominately utilized in sport psychology research to examine the youth-to-senior transition (Stambulova, 2003, Wylleman and Lavalée, 2004). A more recent empirical model outlines the sequence and time course of the transition period, consisting of four phases: *preparation*, *orientation*, *adaptation*, and *stabilization* (Stambulova et al., 2017). In the temporal structure of the model, the components of the transition process (i.e., Demands, Resources, Barriers, Coping Strategies and Outcomes) and their dynamics within each phase are included. The first two phases have been examined extensively in British professional soccer in academic literature and will be subject for this professional doctorate's exploration into American professional soccer, as there is a dearth of evidence on the youth-to-senior transition in the country's top-tier domestic league, MLS.

The preparation phase is an academy player's physical and mental preparation for a full-time move to the senior level following initial opportunities to train with the first team and experience the professional environment (Pehrson et al., 2017, Swainston et al., 2020b). Typically, clubs utilize a 'staggered entry system,' giving young players a gradual introduction to the professional environment to allow them the opportunity to slowly integrate with first

team players and staff (Morris et al., 2015). Røynesdal et al. (2018), explains that academy players are often promoted by first team management to the senior level because either a first team player is injured and management need a replacement in an upcoming training session, or first team management have observed an academy player and invite him to train with the first team. First team management may also adopt specific periods of the preseason, or its entirety, as the opportune time to integrate academy players into the professional environment as key senior players may be absent due to prescribed rest following major competition whilst on international duty.

After exiting the academy and signing a professional contract, a young player moves full-time into the professional environment to begin the orientation phase where they learn more about the demands in the new environment and become accustomed to the first team and its organizational structure and culture in order to fit in (Swainston et al., 2020b). In British professional soccer, the senior level is often characterized as being a brutal, ruthless, hyper-macho and performance outcome-oriented environment (Nesti, 2010), whereas young players' previous setting in the youth academy is described by Richardson et al. (2013) as a more caring, nurturing and supportive environment that is predominately process-oriented in order for development to occur. Concerns have therefore been raised that the youth environment may not appropriately prepare players for the harsh realities of professional first team soccer (Mitchell et al., 2020b). Richardson et al. (2013, p.149) argues that most young players are ill equipped for the transition as they lack "the requisite skills, knowledge, and experience to cope, survive, and perform" in the first team. Likewise, players have reported prior to the transition feeling uncertain if they are ready both physically and psychologically to move up to the first team (Morris et al., 2017).

9.3.3 The Developing Mastery Phase

A key challenge then for professional clubs is the management of a player's transition from the academy into the first team (FIFA, 2021b). Exiting the youth academy and signing a professional contract commences a new, critical phase of development often referred to as the 'post-academy phase' or 'developing mastery phase,' which is presented in a soccer-specific transition model by Richardson et al. (2013). The model, adapted from the Wylleman and Lavallee (2004) developmental model of transitions, encapsulates the various changing features that players must face and cope with as they progress upwards through a club's organizational structure. As alluded to previously, Richardson et al. (2013) asserts that young players, at an athletic level, may not be fully prepared for the first team and still require continued and focused developmental work, such as opportunities for routine training, as well as a rhythm of regular match exposure. Thus, training, competition, and the development of performance excellence, or mastery, become the major foci of young players transitioning into professional first team soccer (Mills et al., 2014).

To better support transitioning players' development, MLS clubs adopted the globalizing club structure model from Europe and established reserve teams, or B teams, that compete in the country's second- and third-tier domestic leagues currently run by USL. The operation of a reserve team may allow a more fluid connection between a professional club's academy and first team (Dowling et al., 2018), and provide young players a supportive yet challenging environment where they can continue to develop after graduating from the youth academy (Relvas et al., 2010). However, not every MLS club has a reserve team, and like in Europe, the management of the reserve team can vary club-to-club. Further, reserve team operations for various MLS clubs have been in a constant state of flux due to incessant changes made in the US' divisional structure below MLS (Warren and Agyemang, 2019). In 2022, MLS clubs will operate their reserve teams in either the second division, USLC, or in a newly

established MLS reserve league, which may be sanctioned as a third division domestic league. A handful of key clubs want their reserve teams to remain in USL (i.e., Atlanta United FC, D.C. United, LA Galaxy and New York Red Bulls), which will splinter MLS' attempt to centralize its 'professional player pathway,' creating simply more headache for an already complex professional soccer landscape (see Chapter 1). Thus, surveying MLS stakeholders' attitudes and perspectives on the efficacy of the youth-to-senior transition within the league is a worthwhile endeavour at this time. Surveying will provide insight into the current state of player development in North America and will unearth elements of current working practice within the organizational structure of MLS clubs by specifically examining how clubs approach the transition process. This may in turn elucidate unique perspectives on the youth-to-senior transition that either support or contrast the strictly British context that currently dominates the academic literature.

Athletic level	Academy Development	Post-Academy Developing Mastery	First Team Mastery
Psychological level	Adolescence	Social insecurity and comparison	(young) Adulthood Limelight, Stardom
Psycho-Social level	Peers, Parents, Sports Psychologist, Education & Welfare Officer	Partner, New Coach(es), Family	Manager, New Coach(es)
Environmental and Cultural level	Process-oriented, Nurturing, Caring, Empathic	Uncompetitive, Lonely, Isolated, Uncertain, Stagnant	Outcome-oriented, Ruthless, Masculine/Macho, Heightened competition, Team
Nature of Support	Highly supportive	Bereft of social support	(Typically) crisis management, Sophist

Figure 9.8. The social-cultural model of athlete transition (Richardson et al., 2012).

9.3.4 Factors Influencing the Transition

In the youth-to-senior transition process, there are numerous variables including individual and external factors that are playing out within the organizational structure and culture of a professional club which together can dynamically influence a young player's development and their transition into the first team (Drew et al., 2019). The individual, external, culture model of the junior-to-senior transition produced by Drew et al. (2019) presents these variables and argues that interventions, or multidisciplinary support, that can

target specific or multiple variables will likely lead to more successful transitions. For sport science staff working in professional clubs, the physical and performance development factors within the transition process are both noteworthy for greater focus and consideration.

An increase in physical demand from the academy to the first team has been frequently cited as a debilitating external factor influencing the transition (Drew et al., 2019, Finn and McKenna, 2010, Morris et al., 2016, Stambulova et al., 2017, Swainston et al., 2020b). Physical demand, also referred to as load, is defined as “the cumulative amount of stress placed on an individual from multiple sessions and games over a period time” (Gabbett et al., 2014). In British professional soccer, adult players have been reported to participate in approximately 220 team training sessions and 60 competitive matches over the course of a season (Strudwick, 2013). More recently published research has quantified and compared the differences in physical load between the youth and senior levels. In matches, academy players generally record less high speed running distance than under-23 players, and less sprinting distance than first team players (Reynolds et al., 2021b). When examining differences in weekly load, academy players also record significantly less total distance than first team players for running velocities above 25 km.h⁻¹ (Houtmeyers et al., 2021). These findings, albeit from a British and European context, provide evidence of a physical gap that exists between the youth and senior levels of the game. Coaches and sport science staff must ensure prescribed physical load in both the youth academy and reserve team is appropriately preparing young players for the demands at the senior level.

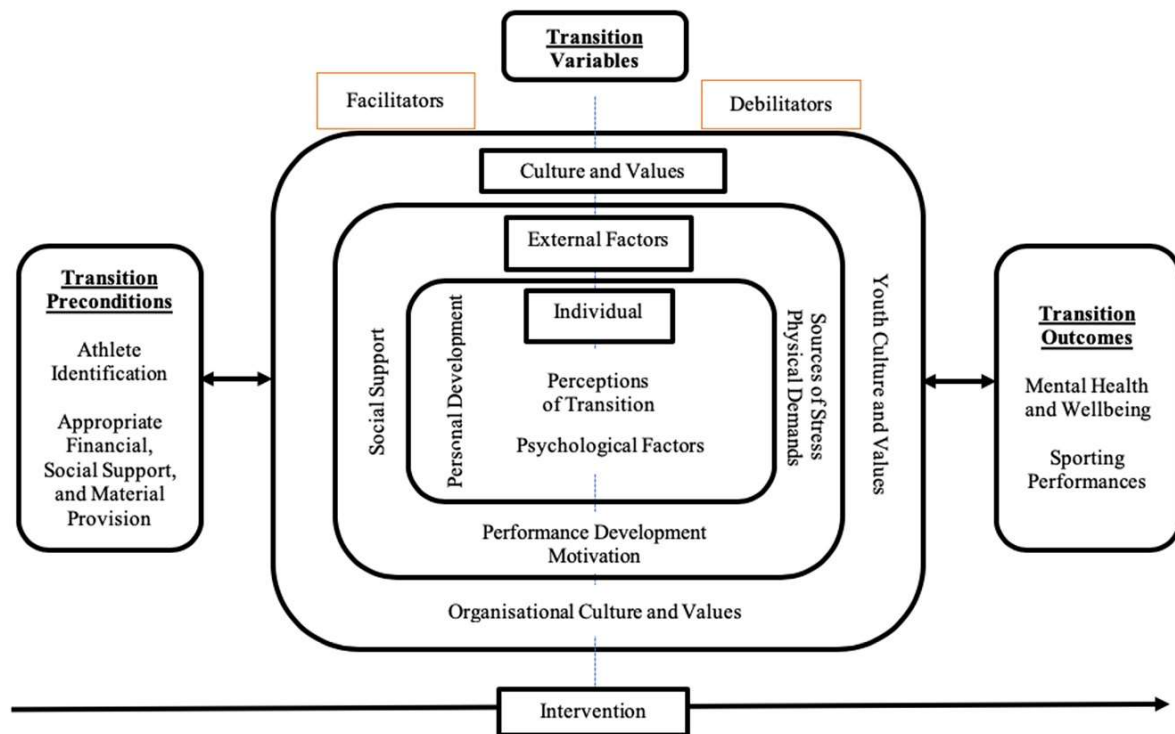


Figure 9.9. The individual, external, culture model of the youth-to-senior transition (Drew et al., 2019).

Closing the physical gap and coping with increased physical demands are significant challenges that may impact performance development factors, such as readiness for the next level of competition and earning competitive match minutes, which can be either facilitative or debilitative towards transition outcomes (Drew et al., 2019). For example, a young player earning first team appearances as a ‘starter’ or ‘substitute’ in competitive matches immediately after becoming a professional may be viewed as facilitative, while reduced match minutes or a lack of opportunity for competitive match exposure has the opposite effect and can result in young players losing confidence (Bruner et al., 2008), as well as the necessary soccer-specific fitness to cope with the increasing match demands at the senior level (Barnes et al., 2014). The organizational structure of professional clubs in MLS, as previously discussed, may provide a solution to the latter scenario. Often young players on MLS first team contracts are on ‘open loans’ that allow them to move back-and-forth between the first team and reserve team. Thus, a young professional who is a ‘non-starter’ in the first team roster can be moved down internally to the reserve team to ensure they acquire appropriate match exposure and maintain

soccer-specific fitness (Anderson et al., 2016b). MLS clubs also often release young US homegrown players for USYNT domestic training camps and international competitions where they may have additional opportunities for match exposure while away on international duty. Although player movement between teams is a solution for match exposure that may be facilitative to a successful transition, FIFA (2021b) has raised concerns that movement between multiple teams with differing interests may be disorienting and harmful for a player's development during the critical transition period.

For optimizing physical load prescription, player movement between multiple teams may conflict with traditional microcycle periodization models and their accompanying taper strategy. The microcycle, or training week, is the most important and functional planning tool when designing a periodized training plan (Haff, 2016). Various studies have examined the distribution of daily and accumulated load during a weekly microcycle in professional and elite youth soccer (Anderson et al., 2016a, Clemente et al., 2019, Coutinho et al., 2015, Hannon et al., 2021, Kelly et al., 2020, Malone et al., 2015, Martín-García et al., 2018). The implications of match load for starters versus non-starters has also been explored (Anderson et al., 2016a, Martín-García et al., 2018, Stevens et al., 2017), but no investigation has described a young player's physical load when moving between multiple team settings within a season or training week whilst undergoing the youth-to-senior transition. By moving between multiple teams, young players may be undergoing varied weekly periodization models, which may impact long-term physical adaptations and player development.

Despite an increase in young US homegrown players transitioning into first team soccer in MLS, very little is known about how these professional clubs approach player development, particularly during the youth-to-senior transition. The growing organizational structure of MLS clubs (and the number of MLS clubs) ensures young players have greater opportunities for continued development. However, player movement between multiple teams to ensure

appropriate match exposure can often present operational hurdles that require constant communication between staff and ongoing monitoring of players' readiness, training status, and fitness to avoid training errors (e.g., injuries and inappropriate training) (Coutts, 2017). Solutions in preparation planning (i.e., periodization) and load management for elite young players have received considerable attention in the sports science literature (Kiely 2011; Murray 2017) and are recognized as key strategies to optimizing performance and mitigating injury risk, which in turn can promote player development (West et al., 2021). Investigating how clubs approach preparation planning in North America is particularly worthwhile, as both MLS and USL operate across four time zones meaning sport science staff must also be cognizant of the demands associated with frequent long-haul domestic air travel and stressful environmental conditions, including heat, humidity, cold, and altitude, which can pose particular health and performance challenges (Bergeron et al., 2012). Historically, sports science research examining the various demands in professional and elite youth soccer and its impact on player development has primarily been conducted in professional clubs based in the United Kingdom and Europe. Therefore, the overall aim of this professional doctorate is to evaluate player development during the youth-to-senior transition in professional soccer in the United States. While carrying this out, the following objectives will be achieved:

- Collate the attitudes, perspectives of various stakeholders within MLS concerning the efficacy of transitioning 'homegrown players' into professional first team soccer.
- Identify current working practices and approaches to player development during the youth-to-senior transition.
- Elucidate the overall physical loading from training and matches in a calendar year for a US homegrown player during the transition.

9.3.5 Outline of Studies

The following sections below provide a breakdown of each study that will be conducted as part of this professional doctorate to fulfill the requirements of the DSportExSci program at LJMU. The outline provides the study's prospective title, aims, participants, methods, analysis, and key outcomes. Chapter 4 will provide further details on carrying out the action plan for each of these prospective studies.

9.3.5.1 Online Survey [Study 1]

Title: Survey of stakeholders' attitudes, perspectives and working practices in MLS concerning the youth-to-senior transition

Aims: This study aims to understand the current attitudes, perspectives, and working practices of various MLS stakeholders with regards to the youth academy and reserve team within MLS clubs and ascertain their efficacy in the transition of players into professional first team soccer.

Participants: Stakeholders working in administration, coaching, sports science and medicine, and talent identification/recruitment roles across the various levels of MLS clubs, including the youth academy, reserve team and first team. Ideally, club executives (e.g., sporting director) will also be recruited to participate.

Methods: Through purposeful sampling, an online, cross-sectional survey will be distributed to all known MLS stakeholders and additional prospective participants working within MLS clubs will be contacted directly via email. The survey will have a variety of questions that employ a Likert-scale, along with a limited number of multiple-choice questions and open-ended questions asking for stakeholder's opinions on matters concerning the youth-to-senior transition and its process within their club environment.

Analysis: The survey will determine MLS clubs' organizational structure as well as learn who (i.e., sporting director, academy director, club board, etc.) or what entity (youth academy, first team, or separate entity) holds authority over the reserve team. The survey will also examine

the process of the transition and learn which stakeholders are involved and influential in this process. Finally, the survey will address the effectiveness of the clubs' youth academy and reserve team in successfully preparing players for professional first team soccer.

Key outcomes: The findings will elucidate practitioners' attitudes and perspectives of the youth-to-senior transition, specifically from a North American context, which has undergone constant change at the youth and reserve team-level. The findings will also provide evidence of current working practices within MLS concerning player development.

The findings from this survey will also inform and determine the course of action for a follow up study, which will be the fourth and final study of this professional doctorate.

9.3.5.2 Case Studies [Studies 2 - 3]

Title: Annual physical loading of young professional soccer players undergoing the youth-to-senior transition in MLS

Aims: These two case studies aim to elucidate the physical loading of two young professional soccer players undergoing the youth-to-senior transition by quantifying their combined external and internal training and match-load distribution and accumulation across a calendar year.

Participants: Two US homegrown players competing in MLS during the 2019 season. Both were in the transition period and moving between multiple teams, including their club's first team, reserve team, and youth academy (U-19), as well as embarking on international duty with the USYNT program, which included participation in the regional confederation's U-17 Championships (i.e., World Cup Qualifiers) and in the FIFA U-17 World Cup.

Methods: These two studies will examine the players' training and match history from the 2019 calendar year, including all of their field-based training sessions conducted with the first team, reserve team, youth academy, and USYNT. In addition, all available match data will be collected and incorporated into the analysis. For example, pertinent match information to be

collected include match status (e.g., starter, substitute, reserve), match type (MLS, USL, etc.), venue location (Home, Away, Neutral), and time zone (e.g., Eastern/UTC-5:00, Central/UTC-6:00, Mountain/UTC-7:00, Pacific/UTC-9:00).

Analysis: The players' monthly training and match frequency and volume will be determined. Further, training and match-load data will be categorized by team and separated into appropriate mesocycle phases. External load measures used for subsequent analysis include, total distance (m) and distance (m) completed at high intensity (running speed >14.4 km/h) and distance (m) completed at very-high intensity (running speed >19.8 km/h). The internal load measure collected and used for analysis is session rating of perceived exertion (sRPE; $RPE \times \text{Event Duration in Minutes} = \text{sRPE}$). The training and match-load data collected during the players' movement across multiple teams will underscore the complexity of load management and preparation planning for players undergoing the youth-to-senior transition in North American professional soccer.

Key outcomes: The findings will provide unique narratives of young players' physical loading as they move between multiple teams within a calendar year whilst transitioning into first team soccer. Likewise, these findings will address the unique challenges coaching and multidisciplinary staff face when working in elite youth development in North America, managing player preparation and load management.

9.4 Training Plan

I have created a prospective timeline of an action plan that will be carried out in the coming year(s) in order to successfully complete the DSportExSci (Figure 9.10). Each study and its subcomponents have been given an individual timeline, which serve as targets to aim for whilst completing this professional doctorate. USYNT programing will resume this autumn and I imagine will pick back up significantly in 2022. Thus, sticking to these targets in the timeline will be of the upmost importance, so that this professional doctorate will be completed

in a timely fashion. Discussions with the USSF's new Director of HP have been positive and he, along with several other directors and executives are keen to learn the results of the survey study. Ideally, the ethics for the professional doctorate will commence relatively soon and be completed before 2022.

The data collection for all studies will take several months. The survey will preferably be conducted in the first quarter of 2022, launching in January, when I believe most prospective participants will be available to complete it. MLS preseasons typically commence at the end of January and the regular season kicks off in March, so recruiting participants before preseason commences is ideal. For the case studies, I may consider domestic air travel to meet with the prospective clubs to discuss releasing player data. Most sports science research examining elite youth development and published in academic literature comes from a British context (i.e., Elite Player Performance Plan), while very little research published in the US investigates elite sport. Gaining access to players' data will entail identifying progressive clubs (and staff) who are open and willing to sharing data.

One US homegrown player that I have identified as an ideal participant for the case studies has recently departed MLS and signed with a club competing in one of the 'Big Five' European domestic leagues. Therefore, I believe the first team management at the MLS club will be more open to sharing a previous player's data. Further, I will promote this case study as an opportunity for collaboration and reflection on player development. The other US homegrown player that I have identified currently completes for an MLS club that, on face value, appears to be open to sharing club information as it has historically hosted an annual sport science conference. Ultimately, acquiring player data will entail seeking consent and special permissions from the player, the MLS club, and the USSF. I must exercise due diligence to ensure the release of the player data in a timely fashion to avoid delays.

Finally, Chapter 1 of this training plan submission has provided a strong start in establishing a skeleton for my literature review. It has summarized the evolution of elite soccer in the US and presented several socio-cultural, economic, and political factors that have influenced the growth and development of the sport since the mid-90s. Over the coming months, I will continue to research and add more content in order to provide a more comprehensive summary of the landscape, and in particular the idiosyncrasies of professional soccer in the US (i.e., MLS and USL). Ultimately, I hope that with the support and expertise of my supervisory team, my literature review will meet the high standards set by LJMU and be a quality, publishable piece.

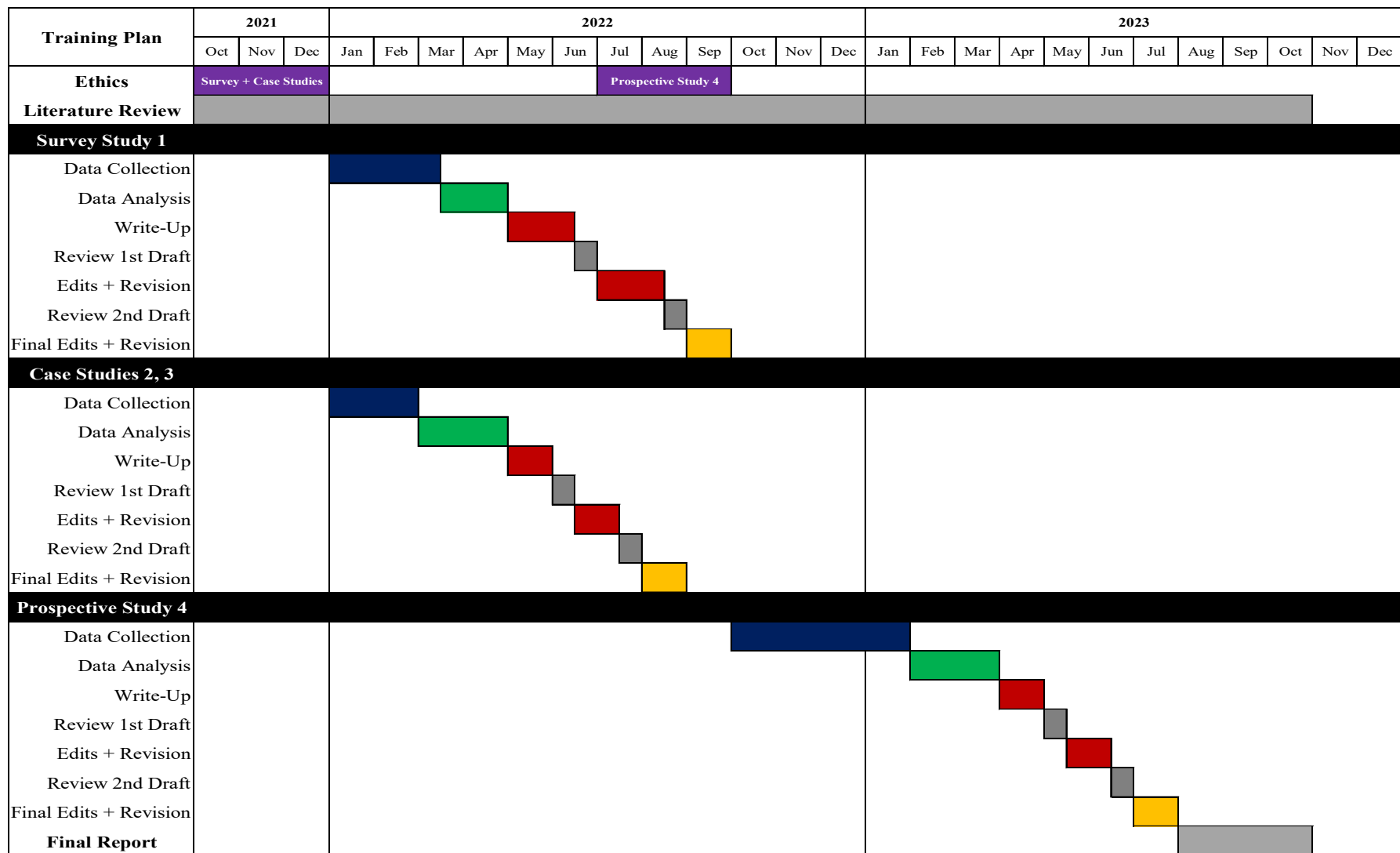


Figure 9.10. Gantt chart displaying the timeline for completing the DSportExSci Program at LJMU

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