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Title page

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#### **Abstract**

This study explored the extent of financial constraints experienced by athletes on the England Talent Pathway, as perceived by talent leads from various sports. Using a mixed-methods approach, 34 participants completed online surveys with 26 follow-up interviews. Findings showed the prevalence of financial constraints on individuals within the system, with three emerging themes: costs; demands on athletes; and potential funding support. 'Pinch points', causing the greatest severity of financial constraint, emerged further along the pathway and there were infrequent examples of mechanisms to identify talented athletes experiencing financial hardship. A means-tested system, premised on the demonstration of potential, is suggested by talent leads as a way of providing funding for athletes to ameliorate financial constraints in the future.

# **Keywords**

Talent, financial constraints, talent pathway, theory of constraints

#### Introduction

The aim of this research was to explore the financial constraints affecting athletes on the England Talent Pathway (ETP), from the viewpoint of Talent Leads (TL) who were employed within a range of National Governing Bodies (NGBs) of sport to lead the development of talented athletes. In England, each NGB employs a TL who is responsible for ensuring the ETP is effectively established and maintained. Sport England (SE) is a government-funded organization that decides how to invest funding (£80m over a four-year cycle (2013-2017)) across forty-six NGBs to create opportunities for talented athletes to excel in their chosen sport, by creating the 'England Talent Pathway' (ETP) (DCMS, 2012; Sport England, 2014). The delivery of 'high quality talent development, which creates a strong ETP to link with UK Sport World Class and English elite programmes' is one of a number of outcomes that NGBs were asked to deliver (Sport England, 2012, p.6). NGBs of sport are funded by Sport England to develop and deliver the ETP in their specific sport if they meet certain Key Performance Indicators (KPIs) within a four-year cycle. Examples of these KPIs include the quality and quantity of athletes at the top of the pathway, breadth and scale of the pathway, athlete progress through the pathway and the quality of the pathway itself (Swim England, 2017).

While ETPs vary between sports, typically they have levels for athletes to pass through before they may reach World Class and Elite programmes (Roberts & Armstrong, 2012). Most NGB pathways begin in mass participation environments, such as community clubs and schools, progressing to athlete involvement in more exclusive Regional and National age-group competitive domains predominantly accessed through the processes linked to talent identification and selection. Whilst the mechanisms that NGBs employ within their talent pathways are often similar, their practices are extremely varied and influenced by whether they

are an early or late specialisation sport, the funding that they receive and the prominence of their sport within the UK.

Each NGB employs a TL who is responsible for liaising with SE in ensuring the ETP is effectively established and maintained; inevitably each TL will face distinctive issues and have a unique job title. For example, in Taekwondo, the role is known as a 'Performance Pathway Development Manager' and in Boxing it is referred to as the 'England Talent Pathway Manager' (Sport England, 2014). Irrespective of the title of the role, TL's have strategic and leadership responsibilities within the pathway and are responsible for planning recruitment and selection practices, establishing athlete development programmes, supporting participation at key competitions and liaising with parents and schools.

# Talent development processes and systems

Many talent development theories in sport extol the value of specific *processes* for optimising athletic potential; for example, acquiring 10,000 hours of deliberate practice (Eriksson, Krampe and Tesch-Römer, 1993) or moving through certain stages of development (Côté, Baker and Abernethy, 2003). However, while these processes may enhance an athlete's ability to realise their potential, there is a need to further understand the interrelationships between these processes and the role of *systems* in enabling or constraining their deployment (Bailey and Collins, 2013; Dettmer, 1997; Ziegler, 2005).

Gagné (2004) suggested these interdependent systems include Internal Intrapersonal systems (e.g. physiological and psychological) and External Environmental systems (e.g. coaching and family), along with elements of chance. In an update to his original model, Gagné (2010) reported that the interface between Intrapersonal and Environmental systems was stronger than originally indicated, with three categories of 'environmental catalysts' involved in talent development; Milieu (physical or geographical influences), Individuals (influence of

significant persons) and Provisions (talent development services and programs). This study is particularly interested in exploring the interdependence of TLs as Individuals and the ETP as a Provision.

While Gagné's Differentiated Model of Giftedness and Talent (DMGT) provides an overview of the talent development process through the articulation of interrelated systems, Goldratt's (1990) 'theory of constraints' suggests that achieving excellence revolves around effectively managing these interrelated systems. The 'theory of constraints' also contends that at least one constraint in each system limits achievement of higher levels of performance relative to its goals (Aryanezhad, Badri and Komijan, 2010). In sport, because of the multifaceted and expanding range of factors that could potentially affect the likelihood of being successful, it has become increasingly important to understand the complex interrelationships between these systems (Davids, et al., 2013; Gagné, 2011; Vaeyens et al., 2008).

#### Finance as a constraint on talent development

Previous studies have demonstrated a link between financial constraints and sports participation, although these studies are typically targeted toward exploring specific socioeconomic populations and their overall sport participation (Holt et al., 2011; Nielsen et al., 2011; Steenhuis et al., 2009). From an expertise development perspective, Baker et al. (2003) suggested that athletes unable to access certain financial resources face a difficult pathway in accumulating high levels of practice necessary for expert performance. Furthermore, Baker and Horton (2004) proposed a framework of primary and secondary influences on sport expertise; suggesting that financial investment, as a secondary influence, is an important function provided within the construct of familial support. Although the influence of environmental constraints has been considered in the development of talented athletes (Baker et al., 2003; Baker, Cobley and Schorer, 2012; Bloom, 1985), little has been published

regarding the constraining nature of finances within the specific system of a talent pathway.

In a rare exception to the rule, a recent survey (Sports Aid, 2013) reported that nearly 40% of athletes identified the cost of participation as the single greatest barrier to their success; this can be compared to other recognized constraints such as lack of access to facilities (9%), coaching (7%) or equipment (1%). While these data may reflect a potential sampling bias (by definition Sports Aid athletes will already have had financial support because of identified hardship), they corroborate previous evidence that also illustrates the importance of finance for retaining talented athletes, specifically in Athletics (U.S. Olympic Committee, 2003; Shibli and Barrett, 2011). Although these effects vary across sports and at different levels of performance, what is constant is that financial support continues to play a prominent role in the development and retention of athletes on a talent pathway.

To our knowledge, there has been no research exploring the perceptions of sports administrators, such as TLs, responsible for developing and supporting talented athletes across a range of sports. Therefore, this research would have implications for the future support of athletes on a talent pathway, by offering new perspectives on how finances constrain the system and how administrators of such pathways could recognize and support athletes experiencing financial hardship.

## Method

## Study design

A mixed methods research (MMR) approach was deemed suitable for this particular study to consolidate previous survey data gleaned (SportAid, 2012) and further probe key areas to present a more detailed and personalized perception of financial constraints affecting athletes. Therefore, the study had two stages, with the first stage involving the completion of an online

survey by 34 TLs and the second stage consisting of semi-structured telephone interviews, lasting 30-45 minutes, with 26 TLs who had also completed the survey. Drawing on recommendations for the timing and ordering of data capture (Creswell and Plano Clark, 2007), online surveys were conducted first, with that data informing the interview schedule. Morse (2010) terms this approach as 'sequential exploratory'; data from one method is used to inform the design of a subsequent method to explore major themes; in the current study qualitative data supplemented quantitative data.

Perhaps one of the most controversial elements of MMR is the integration of findings and use of representational forms (Sparkes, 2015). While interview data were important in understanding the beliefs, attitudes and values of TLs as they made sense of, and shared their views on, the research area, it was also important to triangulate these findings with survey data, with equal parity. Bryman (2007) suggests that this equal parity, or what he terms as parallel representation, is not met in over half of reviewed mixed methods papers.

Furthermore, it has been suggested that without a fully integrated approach, the yield of data analysis is the equivalent to conducting the quantitative and qualitative analysis separately (Bryman, 2008; O'Caithain, Murphy and Nicholl, 2010). To achieve integration, in light of our explanatory sequential approach to MMR, we use a visual 'joint display' to represent the data (Gutterman, Fetters and Cresswell, 2015). A joint display is defined as a way to 'integrate the data by bringing the data together through a visual means to draw out new insights beyond the information gained from the separate quantitative and qualitative results' (Fetters, Curry and Cresswell, p.213).

## Online survey

The survey was co-constructed with an advisory group from Sport England and Sport Aid to ensure validity of the questions being used and relied on findings from previous related studies that have explored similar constructs (Gould et al., 2006; Harwood & Knight, 2009; Sports Aid, 2014). The survey contained 35 items, including a mixture of yes/no, multiple choice and open questions constructed under five main headings: (1) Impact of financial constraints on retention/ drop-out, (2) Costs associated with being on the ETP, (3) Provision of funding sources, (4) Pinch points, and (5) Identifying hardship, taking approximately 15-20 minutes to complete.

#### Semi-structured interviews

A team of five researchers met at regular intervals prior to the beginning of the interviewing process to discuss the interview format and clarify any ambiguities with the proposed terminology and interview structure. This process was informed by discussions with senior representatives from Sport England and Sport Aid, information drawn from analyzing the data from the online survey and the limited previous research related to financial constraints. At this stage, five main themes were determined: (1) Ability to pay, (2) Financial pinch points, (3) Nature of expenses, (4) Funding streams to support the athlete, and (5) Identifying hardship. Pilot interviews were carried out with six TLs and modifications to the interview schedule and format were incorporated. An interim meeting was held at a mid-way point during the course of interviewing to conduct a preliminary analysis of findings in order to probe certain areas in more detail in subsequent interviews. For example, the specific nature and placement of financial 'pinch points' was identified as an emerging theme so additional probes were added to explore this area in more depth.

#### Data analysis

Online survey responses were initially analysed using standard descriptive statistics. All interviews were tape-recorded and transcribed verbatim by a third party. The authors then listened to each of the interview tapes and scrutinized the transcriptions in order to verify

their accuracy. Transcripts were then analyzed using a process of selective coding. Individual units of meaning were then initially represented by a word or term and then amplified into a descriptive sentence to allow for further axial coding (Strauss and Corbin, 1998). Themes and sub-themes were then proposed and subsequent 'thematic descriptions' were used to ensure consistent application of findings. For example, the theme of 'Costs' was described as 'the specific costs incurred as a result of being an athlete on the ETP'.

To this effect, the themes derived from the analysis of qualitative data were aligned to the survey data, as demonstrated within Table 1. This process was not without obstacles; analysis of qualitative data yielded emerging themes over and beyond the parameters established within the survey data, for example 'pathway structure'. Given the expansive and explanatory nature of semi-structured interviews within a sequential explanatory MMR approach, this was to be expected. As a result, any qualitative data that we felt merited further discussion is represented without an alignment of quantitative data as generated through the surveys.

## **Results**

The NGB pathway contained a median of 3 levels (range 0-8 levels) that were used to signify an athlete's progression along the pathway; therefore Lower, Middle and High was used to categorize responses. The number of athletes on each ETP ranged from 27 to 16,428 (median = 120 athletes). On average, athletes started on the ETP at 12 years of age (range 6-17 years), moving to World Class / Elite performance, if selected, at 19 years of age (range 12-28 years of age). Three themes and related sub-themes emerged from the interview data; (1) Costsescalating and detailed, (2) Demands on athletes- drop out and pathway structure, and (3) Potential funding support- identifying hardship and future funding solutions.

Table 1. An integrated joint visual display of Talent Leads perceptions of financial constraints affecting athletes on the England Talent Pathway.

\*\*\*Insert Table 1 here\*\*\*

## Discussion

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- 2 The aim of this MMR was to explore the financial constraints affecting athletes on the ETP, as
- 3 perceived by TLs of the NGBs of the sports in which the talented athletes competed. The
- 4 findings generally revolved around the three broad themes of (i) costs associated with being on
- 5 the ETP, (ii) the structure of the pathway itself and (iii) the potential for funding support.

## Costs associated with being on the ETP

- 7 TLs suggested that costs escalated as the athlete moved along the pathway and this escalation
- 8 was exponentially pronounced in relation to the cost-per athlete of the respective sports, with
- 9 higher cost-per athlete sports costing more at all levels of the talent pathway (£3,873  $\pm$  £3,440
- rising to £9153  $\pm$  6530). There seemed to be an interdependency of costs required and demands
- placed on athletes at different levels of the pathway. For example, the escalating costs
- associated with centralized training were determined by the NGB that organized the
- coach/athlete or athlete/competition interface in a specific way, presumably to provide the
- most appropriate level of experience for the athlete to prepare them for competition. While
- 15 TLs focused their accounts of athlete's experiences as rotating around these increasingly
- 16 centralized processes, they rarely contextualized these structures in relation to the financial
- impact they may have on the athlete themselves.
- 18 Reports of increasing equipment, travel, and accommodation costs across sports,
- 19 predominantly financed by parents, are consistent with previous findings from other single-
- sport studies (Côté, 1999; Gould et al., 2006; Harwood & Knight, 2009). This finding is
- 21 illuminating in its own right, in that, irrespective of the varying levels of equipment needed to
- play the different sports, most TLs (70%) still reported escalating financial demands.
- Furthermore, costs almost tripled at all levels of the ETP. 'Pinch points' were identified by

- 1 most participants as specific moments along the ETP in which an athlete experienced the
- 2 most pronounced impact of financial constraints affecting their involvement on the ETP. TLs
- 3 suggested these pinch points were at their most severe when athletes were at University age
- 4 (18-22 years) and just about to enter the elite stage of the ETP. According to Côté (1999), as
- 5 athletes enter an 'investment' stage later in their sports career, in which they concentrate on a
- 6 single sport, the dominant relationship switches from parent and athlete to coach and athlete.
- 7 Although evidence suggests that parents adopt a different role during this stage (Baker et al.,
- 8 2003; Bremer, 2012; Lauer et al., 2010; Wolfenden & Holt, 2006), findings here suggest that
- 9 their ability to fund their child becomes more constraining as other costs during this athlete
- transition come into play, such as supporting University study. It is particularly worrying that,
- following a significant period of sustained financial investment by the triumvirate of NGB,
- parents and the athlete, the most financially constraining period for the athlete themselves is
- in the penultimate stage to fully realizing their athletic performance.

## Structure of the pathway

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- 15 TLs report a mixed perspective on whether financial constraints were a barrier to an athlete
- participating on the ETP, although it was generally recognized that any barrier that did exist
- is more pronounced the further along the pathway the athlete progresses (30% of TLs
- perceived finance as a 'very large barrier' at 'high' levels). This finding could be a simple bi-
- 19 product of escalating costs reported previously, in that the athlete's inability to respond to the
- 20 increasing costs of the sport, as created by the structure of the pathway, might result in
- 21 hardship experienced in remaining on the pathway. In this regard, the quantitative data is
- 22 inconclusive; complicated by half of the TLs within the study feeling unable to report
- 23 whether financial constraints affected drop-out of athletes. Qualitative data affords a further
- explanation of this finding with the suggestion that some TLs have a general perspective on

- the age ranges that athletes are most affected by financial constraints, using key transitions
- 2 (for example, starting University) to demonstrate the interrelationship of disposable income,
- 3 context and demands of the sport. Whilst previous systems-focused reviews of talent
- 4 development programs indicate an emphasis on the broadening of the talent pool at the
- 5 beginnings of the talent pathway as being critical for affording athletes opportunities to
- 6 realize their potential (Sport England, 2015; Gublin, 2012), it seems that support much
- 7 further along the pathway is as equally important.
- The establishment of specific provision based on the potential financial constraints

  experienced by the athlete did surface within the interview data, with TLs suggesting the
- 10 location, frequency and duration of training opportunities for athletes had been modified over
- time to reduce the financial burden of attending. What was less apparent was this same level
- of flexibility within competitive structures, with TLs clearly stipulating the need for a
- talented athlete to travel further, absorb the costs of accommodation and purchase more
- expensive equipment, the further along the pathway the athlete progressed.

# Future funding opportunities

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- Some TLs suggested that their NGB supported the athlete with funding as well as providing information on how to apply for additional funds from other organizations to support their
- progression along the pathway. TLs reported that they were heavily reliant on the coach in
- 19 detecting and reporting an athlete's financial hardship to the NGB. While TLs suggested that
- 20 they had more sophisticated methods of identifying financial hardship further along the
- 21 pathway (primarily due to stronger coach-athlete relationships), they seem helpless about their
- self-declared lack of formalised mechanisms for identifying financial hardship at the lower
- 23 levels of the pathway. TLs suggested that they would means-test any potential future funding
- 24 for ETP athletes, with 60% of TLs surveyed suggesting that they would deploy funding into

the higher levels of the ETP and for athlete support services, rather than to the athlete themselves. One TL further explained this in that funding athletes directly might instill the sense that the athlete had 'made it' (TL 04) and this would, perhaps, cause the athlete to lose focus and motivation in achieving their goals. The perceived duration needed for this level of funding support was different for different sports. TLs from late specialization sports reported that athletes reside in the higher levels of the pathway for longer than their early specialization sport counterparts. This suggests that these particular athletes would require longer periods of funding in comparison to other athletes.

#### **Conclusions**

This study has a number of limitations that need to be noted. Firstly, the sample contained participants with similar roles and is, therefore, constrained in terms of providing narrow perceptions of athlete's participation in the talent pathway. Secondly, variations that existed across sports are occasionally difficult to track, particularly within the qualitative findings, rendering our ability to fully explore contextual factors related to a specific sport somewhat limited. Thirdly, the results of this study relate directly to sports provision in England and, as such, may not be generalizable to talented athletes in other countries.

Goldratt's (1990) theory of constraints suggests that at least one constraint exists in each system that limits the achievements of its goals. Constraints experienced within systems have the potential to severely disrupt the intentions of the system and the findings from this research suggest that the lack of finance is one such constraint. Financial constraints existed at varying levels along the talent pathway, but intensified considerably the further along the athlete progresses. The structure of the pathway, or the 'system', is crucial in facilitating the optimum chances of success for talented athletes to reach their potential. Our evidence suggests that financial constraints render this relationship between the system and talented individuals

- 1 unstable. This instability is indicative of an individual on a perpetual journey as they, and their
- 2 families and the TLs adjust to the demands of the system. This complex interconnectedness
- 3 between the individual and their environment resonates with Monteiro et al.'s (2014) theory of
- 4 'becoming', rather than 'being' excellent.

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Individuals responsible for administrating the system, such as TLs, should therefore be knowledgeable of, and responsive to, any constraints that exist within the system that could be detrimental to achieving the intentions of the system. Whilst TLs articulate a vivid portrayal of financial constraints that athletes experience, the mechanisms employed to ameliorate such constraints seem underdeveloped at both the level of support offered by the TL themselves and that offered through the ETP system established to support the talented athlete. Given the evidence presented here, of the simultaneous prevalence and intensifying nature of financial constraints with haphazard levels of 'system' support, it would seem prudent that those responsible for the design and delivery of any system for talented athletes establishes mechanisms for identifying financial hardship at the earliest opportunity. Furthermore, TLs need to support athletes, particularly those further along the pathway, in supporting their participation in competition as that is where the greatest financial constraint occurs; redesigning competitive structures, using regional delivery platforms and helping the athlete to attract local sources of funding are two ways in which this support could be offered. It seems plausible to suggest that systems established to support talent development in related fields (e.g. music, chess, ballet) could also be exposed to difficulties caused by financial constraints experienced by talented children and young people.

Further research related to the impact of financial constraints on talented individuals and the efficacy of systems in providing support to ameliorate such constraints seems merited. This study concentrated on the ETP, which provides some level of funding for athletes once

- they are recognized as talented by the NGB of sport. Further research needs to explore financial
- 2 constraints of athletes as they reach the base of this pathway and attempt to access a more
- 3 formal structure that seeks to harness their potential within a specific sport. TLs, and the NGBs
- 4 of sport who employ them, require support in understanding the financial constraints affecting
- 5 athletes within their respective sports; further research is required to assess the efficacy of such
- 6 interventions in reducing the financial constraints on athletes on the pathway.

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# 1 Tables

2 Table 1. An integrated joint visual display of Talent Leads perceptions of financial constraints affecting athletes on the England Talent Pathway.

Theme	Sub-theme	Survey data	Interview data
Costs	Escalating costs	70% believe costs increase as athletes progress along the pathway (21% fluctuate, 9% no change) £2,828 $\pm$ 2,563 per year at the lowest level, £4,444 $\pm$ 4,004 at the middle level and £6,899 $\pm$ 5,569 at the highest level of the ETP.	"I think actually the greatest financial constraint is up at the higher end because it is an amateur sport all the way until the low class program and by the time they've reached the top they have often spent you know thousands and thousands to get to that point". (TL 01)
		At the lowest level of the ETP, annual costs associated with performing was £1,881 $\pm$ 2,925 in low cost per athlete sports, compared to £2,075 $\pm$ 1,954 in medium cost per athlete sports and £3,873 $\pm$ 3,440 in high cost per athlete sports. This expenditure increased to £4,448 $\pm$ 4178, £5687 $\pm$ 3943 and £9153 $\pm$ 6530 for a year performing at the highest level of the ETP in low, medium and high cost per athlete sports, respectively.	"I think the further up the pathway you go the costs become higher largely because we have centralised training". (TL 13)
	Detailed costs	Costs across the three levels (low, medium, high) of the ETP were: Travel (29%, 32%, 32%), Equipment (18%, 11%, 8%), Competition fees (13%, 11%, 13%), Coaching (18%, 17%, 16%), Accommodation (8%, 12%, 14%) and Other (14%, 17%, 17%).	"I would say your travel costs definitely increase again because of the locations of some competition events that we hold, but also then the extent of, I guess, the international calendar". (TL 16)  "The equipment, that's the issue, and if you were to add up all the equipment they need from day dot up to world class level your looking between six and seven thousand pounds to get there". (TL 02)

Demands Drop out on athletes

At all levels, >50% of TLs stated finance provided a 'medium' or 'small' barrier to progression. Finance was perceived as a very large barrier in relation to high (30%), medium (6%) and low levels (6%)

50% did not know what proportion of ETP drop-out was due to financial constraints, with 26% stating finances accounted for between 10% and 40% of ETP drop-out.

NGB ETP structure

No aligned data

"I would say we have a number of dropout points... one is around the age of 17-19 when an athlete is predominantly supported by their parents. At that point some go to university and make a decision there and you know the point in which dad or mam decides whether they are going to continue to fund it. I would say really talented ones who are older, probably fractionally over 20, maybe 21 22, they will also end up dropping out at that point because again they are probably having to fund themselves maybe in full time jobs" (TL 16)

"Well, the pinch points start to come, I think, around the age of 13/14, because that's the [name of competition circuit]...rather than a European circuit, this is a World circuit, and players who are on the England talent pathway in the stage 11 to 16...and then the next phase of that England talent pathway, 16 plus, is where they are regularly competing on the world circuit. So a programme of that player which balances training, coaching and the right level of competition could be costing £25,000 by that stage." [TL 23]

"They are paying for themselves, transport and two people, their carers, so the expenses are incredibly high; its not like an individual going for the weekend or you know a family supporting them (TL01)

"A lot of what we've had to do is to negotiate with the regions about perhaps going down to one-day camps purely on the basis that we don't think athletes and parents will be able to pay". (TL 19)

"When they're higher up the talent pathway, I think it certainly does have an impact, because competitions and tournaments, both domestic and in Europe, obviously have financial implications in terms of accommodation, flights, travel... At the lower level, the competitions are fairly localised." (TL24)

Potential funding support Future funding solutions

Identifying hardship

No aligned data

Extra funding should be deployed to the high (60%) level of the ETP, rather than middle (23%) and low (11%) levels.

In detail, funding should be provided for travel (35%), coaching (26%), with only one TL suggesting athlete choice should be used.

Direct payment of costs associated with performance was preferred (59%), with payments to parents (38%) and athletes themselves also mentioned (29%)

"One of the things we did at the start of last season is when people came to the first camp we asked them to fill in their kind of [name of sport] budget as it were. There was an opportunity on that form which was given to me directly to express any concerns about financial hardship that they were having or difficulties that they envisaged with the costs." (TL 01)

"It would be hard for us to say which twelve year olds are the ones we really need to subsidise to keep in the sport because at that point it's really hard to, you know, really understand the potential... I don't suppose we have a structured way to gather that information either in terms of exit interviews or questionnaires." (TL 10)

"[In terms of identifying financial hardship] those players at a higher level on the pathway that we have more regular contact with, the coaches are responsible for managing the relationship with the player and the parents. I think the relationship should be good enough and close enough for us to have an understanding of that. For players at [lower levels of the ETP], I'm not sure we would necessarily find out. I think it would just happen." (TL 24)

"I'd deploy the funding to those who are physically prepared to do the harder work and are mentally prepared to drive themselves up." (TL 03)

"We would have a sliding scale in the same way as in world class and podium potential." (TL 05)

"I think the funding in a way makes them think they've made it, think they're professional athletes and they don't have to work hard any more." (TL 04)