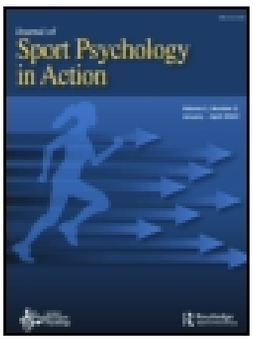

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Introducing an Integrated Model of Talent Development: From Research to Practice

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ABSTRACT

In this paper we are introducing an Integrated Model of Talent Development (IMTD). Predicated on a line of research that originally focused on elite youth soccer (cf. Mills et al., 2012; Mills et al., 2014a,b), the IMTD is a research-informed model that elucidates the interplay between environmental and psychological factors in the effective development of athletic potential. We introduce the core components of the model including environment strengths (e.g., involvement, opportunity, challenge) and development strengths (e.g., perseverance, self-determination, adaptability), and highlight how these interact in multiplicative ways to positively shape athletic potential along the developmental pathway. An example of how the model can be used in practice is included.

KEYWORDS

Athlete pathways; development environment; environmental factors; psychological attributes; strengths approach; talent development

The dynamic and multidimensional nature of talent development (TD) is well documented in the sport psychology literature. The prevailing view amongst researchers is that successful progression to the elite level is largely contingent on a developing athletes' capacities to acquire and express a complex choreography of psychological attributes (e.g., confidence, determination, resilience), and, crucially, be afforded an appropriate environment in which to develop these attributes (Côté et al., 2014; Mills et al., 2014a). The relationship between the environment and the developing athlete has been examined from several perspectives. For example, Côté et al. (2014) utilized the Development Model of Sport Participation (DMSP; Côté & Fraser-Thomas, 2007) as a foundation for the construction of the Personal Assets Framework. This framework focuses on interacting elements of the development context to enhance the specific assets of competence, confidence, connection, and character. In contrast, Henriksen et al. (2010) have put forward an ecologically grounded approach that views TD as a process of systematic and successive change arising from dynamic interrelationships between the developing athlete

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and the micro and macro contexts in which they engage. Despite their differing perspectives, this research is collectively unified in the perceived importance of creating environments that help young athletes acquire the requisite psychological attributes to facilitate their development and performance.

Despite the wealth of knowledge that has been generated about the key psychological and environmental factors associated with the effective development of young athletes; what appears lacking to-date is a detailed understanding of how to systematically operationalize these respective factors in an integrated manner within applied settings. Certainly, from a real-world perspective, what coaches and applied practitioners could benefit from are clear, evidence-based guidelines and practical information on how factors within the development environment can be manipulated and optimized to help young athletes acquire the requisite psychological attributes they need to develop to and excel at the elite level. Toward addressing this need, the purpose of this paper is twofold: (i) to introduce a research-informed model of talent development that elucidates the interplay between environmental and psychological factors in the effective development of athletic potential; and (ii) to showcase how this model can be applied in practice to optimize elite athlete development pathways.

Theoretical underpinnings of the IMTD

The Integrated Model of Talent Development (IMTD) (see Figure 1) is predicated on a line of TD research in elite youth soccer in England (i.e., Mills et al., 2012; Mills et al., 2014a, 2014b). Focused on the investment years stage of development (i.e., 15–21) and conceptually informed by Gagné's Differentiated Model of Giftedness and Talent (DMGT, 2009), the initial study in this line of research sought highly successful expert coaches' views of the intrapersonal factors considered to positively influence the development of players to the elite level. The insights yielded from these experts enabled the construction of a conceptual framework comprised of a range of intrapersonal attributes (e.g., confidence, passion, self-awareness) that were housed within five interrelated higher-order domains (e.g., resilience, intelligence, goal-oriented attributes). A central theme to emerge from this research emphasized the importance of creating the right environment for young players. Notably the coaches also discussed how the requisite intrapersonal qualities could be shaped by creating the appropriate developmental climate. Given the importance placed on the development environment, a follow-up study (i.e., Mills et al., 2014a) sought to better understand the key mechanisms and strategies that these highly successful expert coaches deployed to create the optimal developmental climate in

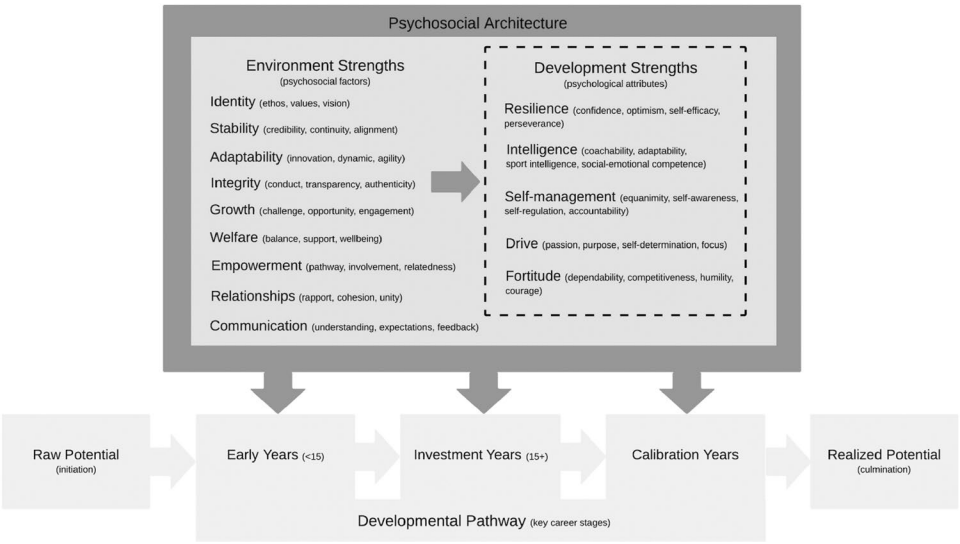

Figure 1. The integrated model of talent development (IMTD).

which to nurture the potential of young players. The findings generated from this study enabled the construction of a second theoretical framework consisting of eight key environmental factors (e.g., adaptability, stability, welfare, effective communication). These environmental factors were considered to dynamically work together to produce the optimal developmental climate for elite young players to successfully acquire the intrapersonal qualities needed to "make it" to the professional level. Taken together, these two distinct yet related frameworks highlighted the dynamic, multifaceted interrelationships between the respective factors in the effective development of athletic potential. Predicated on the core tenets of these frameworks, the following definition for TD was also formed: "The transformation of an athletes' outstanding natural abilities into a specific set of systematically developed skills, competencies and attributes via a prolonged and sustained interaction with appropriate environmental conditions" (Mills, 2013, p. 134). Underpinned by this definition, the IMTD is the result of integrating these two theoretical frameworks to assemble one cohesive model that more accurately highlights the dynamic interplay between the psychological and environmental factors as athletes navigate the key stages along the developmental pathway. Notably, given the propensity of these factors to exert a positive influence on the TD process, in the IMTD they are conceptualized as strengths. Thus, the fundamental purpose of the IMTD is to elucidate how strengths within the environment can be leveraged as a conduit to successfully build the requisite psychological strengths in the developing athlete.

Overview of the IMTD's core components

Conceptually framed by Gagné's well-established DMGT (cf. Gagne, 2009) that delineates giftedness (i.e., natural ability) and systematically developed talent, the IMTD is book-ended by raw and realized potential which denote the initiation and culmination of the TD process. In this way, the core components of the IMTD (i.e., environment strengths, development strengths, psychosocial architecture, and developmental pathway) are considered to interact to elucidate how realized potential materializes from raw potential via a multifaceted choreography of causal catalysts. In the model, development strengths are conceptualized as, a psychological attribute that when activated positively influences optimal performance and adaptive development. These 20 strengths (coalesced into five domains) provide the building-blocks to shape athletes who model the requisite resilience, intelligence, self-management, drive, and fortitude (i.e., strength of character) to realize their potential. Environment strengths can be conceptualized as, a psychosocial factor within the coaching environment that acts as a catalyst to acquire key psychological attributes associated with optimal performance and adaptive development. Collectively, these 27 strengths (coalesced into nine domains) dynamically work together to create the appropriate environmental conditions to positively shape an athlete's development strengths at each key stage along the development pathway.

These core components are framed by the psychosocial architecture. Based on a concept first introduced in the original environmental framework (cf. Mills et al., 2014a) the psychosocial architecture views individual athletes in the context of the combined influence that psychological factors and the surrounding social environment have on their development. Thus, the psychosocial architecture can be conceptualized as, the psychological and social scaffolding that is constructed around the developing athlete. Of note, the original line of research underscored the importance of creating both stage and context-specific psychosocial architectures for developing players. To that end, as opposed to a "one size fits all" approach, a core tenet of the IMTD advocates that each unique stage of development requires an equally unique psychosocial architecture. Moreover, congruent with the original line of research, the IMTD also acknowledges a directional component. Specifically, it is contended that the psychosocial architecture can exert either a positive or negative influence on the development process contingent on its nature. For example, development environments that fail to espouse positive coach relationships or provide sufficient growth opportunities can undermine the athletes' confidence, passion, and perseverance.

The developmental pathway represents the final core component of the IMTD which - to provide further theoretical rigor - integrates the

key elements of the Developmental Model of Sport Participation (Côté & Fraser-Thomas, 2007). The DMSP explains the key stages young athletes are considered to transition through on their development journey. As such, the transformation of raw potential into realized potential manifests itself when a naturally gifted athlete enters the initial stage along the developmental pathway and engages in systematic coaching, training, and practice. The key progressive stages of the pathway include the: (i) early years (i.e., sampling and specializing) and (iii) investment years. Emanating from findings of the original research and subsequently supported in further confirmatory research, the IMDT also includes a stage named the calibration years. This key stage acknowledges that once athletes have successfully made the transition to the elite level, they are still considered a 'work in progress' and must continually look to develop and adapt their game so they can sustain the performance levels required at the elite level.

Collectively, the model and underlying definitions hold several important implications that acknowledge the consensus around TD in sport. First, they make the clear distinction between an athlete's natural ability (i.e., raw potential) at the start of the developmental process and the finished product (i.e., realized potential) at the end. Second, it reflects a balanced perspective and implies that the development of athletic potential is contingent on innate, individual, and environmental influences. Third, consistent with well-established models of talent development (e.g., Gagné, 2009) it denotes that the manifestation of elite athletic talent (i.e., outstanding skills, competencies, and attributes) is systematically developed through engagement with an appropriate development environment.

Constructing the IMTD

The methodological approach taken for constructing the IMTD involved three main procedural steps. The first step involved integrating the original theoretical frameworks into one cohesive model. During the process of assembling the model, theoretical rigor was established via the procedure of analyst triangulation (Patton, 2002). Specifically, a team of three experienced researchers and applied practitioners met to discuss the assimilation and subsequent inclusion of each strength and higher-order domain until triangulated consensus was reached for the IMTD's core components and inherent strengths. Once assembled, the second step involved confirming its applicability and importantly, its transferability to other sporting contexts. This process was achieved via confirmatory research. Specifically, this stage involved extensive cross-cultural research in the form of qualitative in-depth interviews and participant member checks

(Patton, 2002) which were conducted with key stakeholders (n = 18) from a wide range of sports, roles, and countries (i.e., US, UK, Australia). Highlighting the breadth of these interviews, participants included: performance directors, pathway managers, and development coaches from governing sporting bodies; coaches and professional athletes from elite sports teams; as well as athletic directors, head coaches, and student-athletes from NCAA colleges. Illustrating the diversity, sports involved in this process included: Soccer, American football, netball, lacrosse, Australian football, equestrian, basketball, volleyball, rugby, cricket, and softball. The interviews involved explaining the premise of the model, examining the veracity and applicability of its key components and strengths; and cross-checking for both relevance and influence as viewed through the lens of their unique sporting perspective. Insights yielded from this research not only offered support for the core components and inherent strengths but also resulted in the augmentation and refinement of some strengths to ensure applicability to all sporting contexts and pathways. To further ascertain and confirm the veracity of the model, the final procedural step in the construction process involved a deductive review of the extant TD and human performance literature across talent domains (e.g., sport, business, military, healthcare) to ascertain empirical support for the models' key strengths *vis-à-vis* their role in adaptive development.

Applying the IMTD

The construction of the IMTD was guided by the fundamental question: How can we effectively put this research into practice? To-date, the model has been utilized to inform a range of interventions for key stakeholders involved in the TD process. These include: (i) helping athletes identify, build, and activate their unique development strengths; and (ii) sport parent education. Nevertheless, given that a core tenet of the model rests upon the notion that the coaching environment can be engineered to help athletes acquire the development strengths naturally, we feel that the model is at its most applicable and influential when utilized for coach education. Essentially, the goal of the coach education is to equip coaches with the practical knowledge and strategies to positively shape their athletes' development strengths via the coaching environment. Considering the novel nature of the model such applied work is initiated with an introductory 'discovery workshop' led by a trained applied practitioner. To guide workshop delivery an adapted version of the well-established ADKAR change management tool is also utilized. ADKAR is an acronym for the five key steps (i.e., Awareness, Desire, Knowledge, Ability, Reinforcement) involved in achieving successful change (cf., Hiatt, 2006).

Drawing on real-world examples from our own applied work with coaches from elite youth soccer academies and Olympic development pathways in the UK, the key steps of the half-day introductory workshop unfold as follows:

Step 1: Awareness

The initial step introduces coaches to the IMTD by explaining its premise, providing an overview and definitions for the core components and highlighting how these interact to positively influence athletic potential.

Step 2: Desire

To establish 'buy-in' and engagement amongst the coaching group, the practitioner emphasizes how the coaches can develop the practical knowledge and strategies to play a leading role in shaping their athletes' development strengths through their coaching practice.

Step 3: Knowledge

This step focuses on building-out the coaches' practical knowledge. This involves outlining what each strength is, why it matters and how it is behaviorally expressed within the context of their own sport (i.e., what it looks like). The coaches then begin to explore ways the environment strengths can 'work together' to influence the acquisition of different development strengths. To reinforce understanding and knowledge transfer, example illustrations of how the environment strengths can provide the catalyst to build certain development strengths are visualized using "strength streams" to highlight their interactions. For example, as displayed in Figure 2, the environment strengths of involvement (e.g., involving players in decision-making) and feedback (e.g., providing competency-based feedback to athletes) provide the psychosocial catalysts to build self-determination.

Step 4: Ability

The fourth step centers on fostering the coaches' ability to translate this knowledge into action. To achieve this, five development strengths are nominated by the coaching group. Then, led by the practitioner practical strategies geared toward shaping the target strengths are co-created. Real-world examples are displayed in Table 1.

Step 5: Reinforcement

The final step involves establishing systems and processes to reinforce the change to their coaching practice. This involves the subsequent deployment

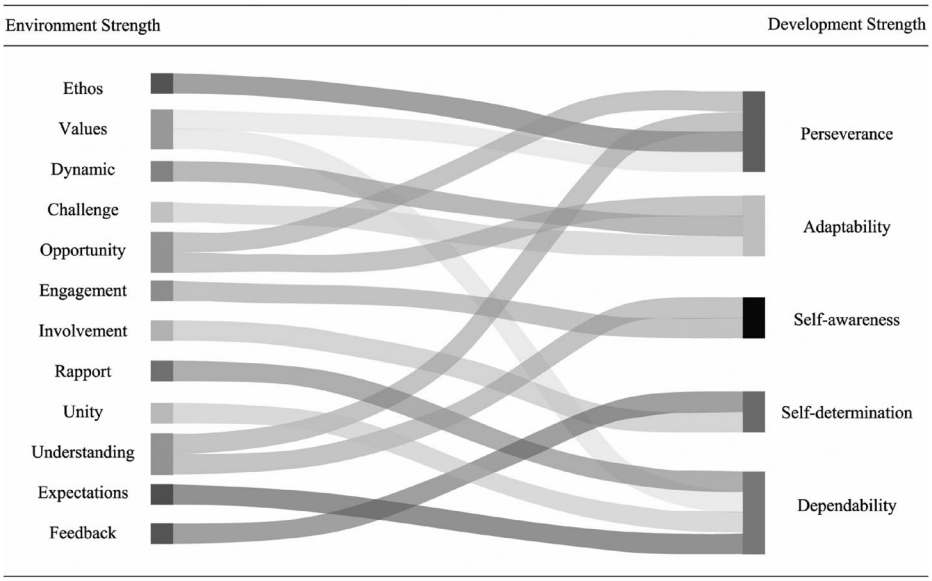

Figure 2. Sankey diagram displaying "strength streams" to illustrate how specific environment strengths interact to shape targeted development strengths.

of two research-driven profiling tools that are used to: (i) evaluate their pathways' environment strengths as viewed from the athlete's perspective; and (ii) gauge the development strengths of their athletes. The feedback from the environment strengths profiling yields actionable insights into what's currently strong and what might require optimization. Conversely, the development strengths profiling helps inform individualized athlete plans by identifying an athlete's natural strengths (i.e., core strengths) as well as those that might need to be built.

Conclusion

Driven by established TD research, the IMTD offers a novel integrated approach to nurture the potential of aspirant elite athletes. An overarching implication of the IMTD is that its key determinants (i.e., environment strengths and development strengths) are controllable and malleable. Given that applied research to guide and inform the systematic creation of optimal athlete development pathways is somewhat limited, the IMTD presents a research-informed applied framework from which to design and deliver interventions in this area. The value of applying the model to help key stakeholders design and subsequently shape the requisite development strengths in their athletes along the development pathway would also appear to hold promise for sport psychology practitioners working in these settings.

Table 1. Examples of shaping strategies co-created in step four of the coach education workshop.

Target DS	Strength meaning	Behavioral expression	ES catalysts	Shaping strategies
Perseverance	Persisting in the pursuit of a desired goal despite obstacles, adversity, or setbacks	• Sticks at it despite failures • Doesn't give up easily • Able to 'shake it off' & go again • Bounces-back quickly from setbacks & adversity	• Understanding • Opportunity • Ethos • Values	• Help athletes understand failure is a crucial part of development • Provide continued opportunities despite failures • Espouse & cultivate growth mindset • Promote improvement over results
Self-determination	Feeling in control of one's own development based on perceptions of autonomy, competence & relatedness	• Takes control of their own destiny • Motivated to accomplish their goals • Displays a strong connection to their sport	• Involvement • Feedback	• Allow input into setting goals & targets • Promote autonomy-supportive coaching behaviors • Provide competency-based feedback
Adaptability	Adapting positively in response to changing conditions & situations	• Able to adjust to changing competition dynamics • Can switch to plan B when required • Displays solution-focused mentality	• Challenge • Dynamic • Opportunity	• 'Stretch' athletes with mentally challenging training situations • Provide dynamic development experiences • Test themselves by competing/training at higher level
Self-awareness	Understanding oneself clearly & objectively	• Aware of own strengths & areas for improvement • Recognizes own values & traits • Aware of how viewed by others	• Understanding • Engagement	• Continually encourage athletes to reflect on their performance & development • Engage athletes in authentic, critical self-examination
Dependability	Being reliable & consistent with one's performances, behaviors, & actions	• Trusted to carry out roles & responsibilities • Performs consistently at high level • Can be counted on by coach & teammates to 'show-up'	• Rapport • Unity • Expectations • Values	• Develop trust with athletes • Build togetherness among playing group • Promote as core value & expected behavior

References

Côté, J., & Fraser-Thomas, J. (2007). Youth involvement in sport. In P. R. E. Crocker (Ed.), *Introduction to sport psychology: A Canadian perspective* (pp. 266–294). Pearson Prentice Hall.

Côté, J., Turnnidge, J., & Evans, B. (2014). The dynamic process of development through sport. *Kinesiologia Slovenica*, *20*(3), 14–26.

Gagné, F. (2009). Building gifts into talents: Detailed overview of the DMGT 2.0. In B. MacFarlane, & T. Stambaugh (Eds.), *Leading change in gifted education: The festschrift of Dr. Joyce VanTassel-Baska* (pp. 5–9). Prufrock Press.

Henriksen, K., Stambulova, N., & Roessler, K. K. (2010). Successful talent development in track and field: Considering the role of environment. *Scandinavian Journal of Medicine & Science in Sports*, *20*(2), 122–132. https://doi.org/10.1111/j.1600-0838.2010.01187.x

Hiatt, J. (2006). *ADKAR: Model for Change in Business, Government, and Our Community*.

Mills, A., Butt, J., Maynard, I., & Harwood, C. (2012). Identifying factors perceived to influence the development of elite football academy players in England. *Journal of Sports Sciences*, *30*(15), 1593–1604. https://doi.org/10.1080/02640414.2012.710753

Mills, A. (2013). *Talent development in elite youth football: From research to practice.* [Doctoral dissertation]. Sheffield Hallam University.

Mills, A., Butt, J., Maynard, I., & Harwood, C. (2014a). Toward an understanding of optimal development environments within elite English soccer academies. *The Sport Psychologist*, *28*(2), 137–150. https://doi.org/10.1123/tsp.2013-0018

Mills, A., Butt, J., Maynard, I., & Harwood, C. (2014b). Examining the development environments of elite English football academies: The players' perspective. *International Journal of Sports Science & Coaching*, *9*(6), 1457–1472. https://doi.org/10.1260/1747-9541.9.6.1457

Patton, M. Q. (2002). *Qualitative research and evaluation methods.* (3rd ed.). Sage.