Original Article

Relationship between the talent development environment and motivation, commitment, and confidence

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Abstract
*Introduction:*Examining the influence of the talent development environment on athletes is crucial for understanding sport participation and the identifying the characteristics of effective talent development.*Purpose:*The purpose of the study was to explore the relationshipbetween the talent development environment and youth athletes' goals, life aspirations, commitment, and confidence. *Methods:*One hundred and twenty-sixdevelopmentGreek athletes aged 12 – 17completed a combination of five questionnaires(Talent Development Environment Questionnaire, Basic Psychological Needs Scale, Achievement Goal in Sport Questionnaire, Life Aspiration Inventory, andMental Toughness Questionnaire)that measured the key environmental and personal characteristics in question.The data analysis included descriptive statistics, correlation, internal consistency, and hierarchical regressions.*Results:*Long-term development focus was a positive predictor of intrinsic goals (*p*=.04) and was associated, positively and negatively respectively, with relatedness and mastery-avoidance goals (*p*<.05). Lack of quality preparation predicted extrinsic goals (*p*<.01) and mastery-avoidance goals (*p*<0.01) but was negatively related with mastery-approach goals (*p*<.05). Long-term fundamentals predicted commitment (*p*<.05) and communication was positively associated with relatedness, but negatively related to extrinsic goals (*p*=.02) and mastery avoidance goals (*p*<.05). A mastery–approach promoted intrinsic goals (*p*<.04) and performance-avoidance orientation predicted extrinsic goals (*p*<.01).However, interestinglythe environmentdid not predict confidence. *Conclusions:*Implications regarding the types of environments to facilitate successful development of young athletes were presented to provide coaches, teachers, and parents with the knowledge for effective talent development.
Keywords: achievement goals, life aspirations, psychological skills, mental toughness, Greek athletes

Introduction

Facilitating effective talent identification and development (TID) has become one of the main challenges to the sport systems and has gained a lot of interest both by practitioners and researchers (Abbott et al., 2004). TID is a key characteristic of sport development systems (Bloyce & Smith, 2010) and an unplanned approach is no longer sustainable due to the ever-increasing competitiveness of sport at a world-class level (De Bosscher et al., 2006).Furthermore, while effective and innovative TID practice clearly exists, academics have identified that there is a general lack of widespread evidence based practice and policy within TID, which is more evident in other fields such as medicine and education (Bailey et al., 2010).

Research has shown that a range of environmental factors affect the development of youth athletes and features of good practice have emerged from research over the years (e.g., Andronikos, 2018;Martindale et al., 2005, 2007; Henriksen et al., 2010).For instance, support from significant others, practice structure, psychological characteristics, coherent long-term focus, sound communication, time and space for late developers are some of the factors that have been presented in the literature.To facilitate evidence-based practice and also aid more specific research protocols, principles of effective practice have been used to devise measurement tools (e.g., Talent Development Environment Questionnaire (TDEQ) - Martindale et al., 2010). However, there is still a relative lack of understanding of the impact of these guidelines on TID program effectiveness (Henriksen et al., 2010; Wang et al., 2011).)

Impact of the Talent Development Environment

Since the development of the Talent Development Environment Questionnaire (TDEQ) (Martindale et al., 2010), there have been limited studies that have used the TDEQ in order to examine the nature and impact of the TDE.Martindale et al. (2013) compared TDEQ scores between athletes in 'higher quality' and 'lower quality' environments, based on the quality of the environment process and the long-term productivity. findings indicated a significant difference in the overall TDEQ scores between the higher and lower quality environments. 'Quality preparation' and 'understanding the athlete' were the two factors that displayed significant differences in favour

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of the 'higher quality' environments. Furthermore, 'long term development focus', 'communication', and 'long term development fundamentals' showed positive trends with small effect sizes in favour of the'higher quality' environments. This work highlights the possibility that certain features of TDEs may be more of a priority for facilitating athlete progression. In line with this, recent findings suggest that the learning environmentis associated with both motivation and satisfaction (Blynova et al., 2020)

In a study by Wang et al. (2011), key Talent Development Environment (TDE)features, specifically'long term development focus', 'long term fundamentals', and 'support network'werefound to be positively associated with intrinsic motivation and mastery-approach goals, and 'quality preparation' and 'athlete understanding' were negatively linked with extrinsic motivation, mastery-avoidance goals, and performance goals. Similarly, Lee et al. (2012) examined the impact of TDE on achievement goals amongst college athletes and found similar results. More recently, Wang et al. (2016) found that long term development focus predicted both mastery and performance approach goals in Singaporean and Korean athletes. Interestingly, they also found that perceived competence mediated the role of the TDE in promoting motivational goals.Additionally, Ivarsson et al. (2015) examined the relationship of TDE and well-being of young footballers. The results showed that those players who perceived TDE as supporting and focusing on long-term development seem to be less stressed and experience higher well-being, which is potentially hugely important in helping athletes to maximise their potential over the long term and avoiding issues relating to burnout and de-motivation.Similarly, mastery climate environments in football clubs were shown to reduce stress levels amongst young footballers (Engan & Sæther, 2018).Furthermore, Mills et al. (2014) used the TDEQ to survey elite youth football players in the UK. The findings revealed that the academies were strong in areas related to coaching, organization, and sport-related support. However, academies appeared to lack quality in areas linked with athlete understanding, key stakeholder relationships and links to senior progression.

In summary of this work, it does appear that key features of the TDE do have clear links with facilitating athlete progression, as well as the characteristics that would be assumed to be very important for the development of athletes, both those interested in pursuing excellence and maintaining participation. For example, given the long-term nature of talent development processes, intrinsic motivation and well-being would be usefully enhanced.

Characteristics of Successful Developers

Motivation and commitment are key elements of successful development within sport and other performance domains. The quality of motivation may also be a keyelement andis broadly divided into two types: intrinsic and extrinsic. Intrinsic motivation refers to the engaging in an activity for the pleasure and satisfaction derived from participating in the activity (Deci, 1975). While there are benefits from any type of enhanced motivation,intrinsic motivation is likely to be a key elementover the long term since the external prod required to drive effort and commitment is not always available and there are many challenges to overcome on such a journey (e.g.,Collins & Macnamara, 2012). Furthermore, intrinsic motivation is associated with many related outcomes such as achievement and performanceconceptual learningand well-being (Ryan & Deci, 2000). Essentially, the goals or life aspirations that people pursue can influence their well-being, their progression within sport and the success of their careers.A recent study further reinforced this by identifying that athletes who perceived sport as a positive experience (enthusiastic athletes) had significantly higher scores on psychological characteristics, had more future goals, and intrinsic aspirations. In addition, positive experiences in sport can have a positive influence on life satisfaction and wellbeing (Berki et al., 2020).

Intrinsic drives are closely associated with satisfying our basic psychological needs of competence, autonomy, and relatedness and also have strong connections with the nature of goal orientation More specifically, the self-determination theory framework (Deci& Ryan, 2008) suggests that pursuing intrinsic goals (growth, community, health, relationships) is related to positive outcomes such as increased confidence, performance, better learning, reduced stress and well-being because they promote the three basic psychological needs (competence, autonomy and relatedness). On the other hand, pursuing extrinsic goals such as wealth, fame and ego orientation is linked with poor well-being, low confidence, anxiety and poor learning strategies since it does not promote the satisfaction of the three psychological needs (Vansteenkiste et al., 2007).

Achievement goals have been divided into task and ego orientation (Maehr, 1989). With task orientation, competence and satisfaction are derived when individuals learn new skills, improve their performance,and do their best. With ego orientation, people perceive themselves as competent and feel satisfaction only when they do better compared to others, when they do normatively well or when they manage to complete a given task with less effort than others. Task orientation has shown to be linked to enjoyable experiences in youth sports (McCarthy et al., 2008). Moreover, task orientation appears to facilitate wider opportunities for learning while also individuals are more persistent and motivated to develop new skills (Da Costa et al., 2015).

The hierarchical model of approach-avoidance motivation proposed the existence of four types of goals (2 × 2 achievement goals) varying in the criteria by which success and competence are defined and valued (Elliot & McGregor, 2001). Mastery-approach goals describe a focus on improving previous personal performances or performing a task in the best possible way. Mastery-avoidance goals indicate a focus on not doing worse than

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previous performances, or not making mistakes. Mastery-avoidance goals reflect a focus on not doing worse than previous performances, or not making mistakes. The focus of performance-approach goals is placed on demonstrating normative ability or outperforming others. Finally, the focus of performance-avoidance goals is to avoid the demonstration of comparative inability, or not being outperformed by others.

Individuals are likely to pursue multiple goals, therefore examining those goals and their content can enrich our understanding of motivated behavior(Wentzel, 2000). As an individual is likely to pursue multiple goals with varying degree of difficulty simultaneously (Kaplan & Flum, 2010), it is reasonable to expect a connection between motivation, goal content and achievement goals. For instance, mastery-based goals were shown to be linked with training effortin martial art athletes (Øvretveit et al., 2019).Confidence isalso shown to be strong predictor of performance and successful development in sports, and indeed other domains (MacNamara et al.,2008, 2010). Additionally, commitment has also been shown to facilitate effective continued development in sports and other domains (MacNamara et al.,2008, 2010). In a recent study, intrinsic motivation positively predicted future commitment to sport (Pedreñoet al., 2016) indicating that goal content and commitment which are essential characteristics for effective development are interrelated.

In summary, given the potential importance of these motivational and confidence constructs to effective talent development, this study aims to explore the relationships of key features of TDEs with goal pursuits, life aspirations, commitment, and confidence on young athletes in Greece. Specifically, 1)Examine the relationship between the factors of the TDE and intrinsic/extrinsic goals, basic psychological needs, achievement goals, commitment and confidence;2) Examine which environmental and personal characteristics predict the key 'motivational' constructs and; finally, 3) Examine the predictors of intrinsic and extrinsic goals using the achievement goals and the basic psychological needs.

Material &Methods
Participants and Data Collection

This study has received ethical approval from the Research Ethics and Governance Committee of the University. The sample consisted of 126 development athletes (91 males and 43 females) from Greece aged between 12 to 17 years. All participantswere athletes of competitive sports clubs participating actively in sports for more thantwo years prior to the study and attending their trainings regularly. All the participants were informed that it is not compulsory to take part in the study and they would be able to withdraw from the study at any moment. The researcher gave assurance about the confidentiality of their responses and encouraged them to ask questions if necessary. All the data was anonymised, and not personal details were asked. Permission was granted from the supervisor of each sports club and consent was gained from the parents of the participants.

Measures

The Talent Development Environment Questionnaire (TDEQ) by Martindale et al. (2010) is a 59-itemquestionnaire measuring seven factors: long-term development, quality preparation, communication, understanding the athlete, support network, challenging and supportive environment and long-term development fundamentals. A 6-point ''Like'' scale was used, starting from 1 (strongly disagree) until 6 (strongly agree).

The Basic Psychological Needs Scale (La Guardia, Ryan, Couchman, & Deci, 2000) consists of 21 items that account for competence, autonomy, and relatedness and it was used to examine the needs satisfaction in the talent development environment. The scale used for this questionnaire was on a 7-point scale extending from 1 (not true at all) to 7 (very true).

The Achievement Goal in Sport Questionnaire (AGSQ) (Wang et al., 2007) measures the four achievement goals (mastery-approach, mastery-avoidance, performance-approach, performance-avoidance) related with sport. The AGSQ consists of 12 items and three items in each subscale are used to examine four categories a) mastery- approach (I want to perform as well as it is possible for me to perform), b) mastery-avoidance (I am often concerned that I may not perform as well as I can perform), c) performance-approach (It is important for me to do well compared to others), and d) performance-avoidance (My goal is to avoid performing worse than everyone else). The likert scale ranged from 1 (not true at all) to 7 (very true).

The Life Aspiration Inventory (Kasser & Ryan, 1996) was used to measure the goal pursuits of the youth athletes. This inventory has30 items which were used to assess six life goals. Student athletes were asked to rate the importance of their aspirations. Extrinsic aspiration scores (wealth, fame, image) and intrinsic aspiration scores (personal growth, meaningful relationships, community contributions) were calculated by computing the mean of the corresponding subscale scores. The scale used was ranged from 1(not true at all) to 7 (very true) to examine the importance of the aspirations of the young athletes.

Mental Toughness Questionnaire (MT48) (Clough, et al., 2002) measures different elements of performance related characteristics, more specifically commitment, confidence, control and challenge. The questions from the subscales of commitment and confidence were chosen from the MT48. The likert scale for those personality questions was ranged from 1(strongly disagree) to 5 (strongly agree).

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Data Analysis

Table 1. Relationships between the TDE and basic psychological needs, intrinsic/extrinsic goals, achievement goals, commitment and confidence

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Long-term Devt. focus	1	-.27	.75**	-.31*	.6**	.23	.74**	.39*	-.37*	.3	.14	.59**	.38*	-.19	.19	-.07	-.19	.02
2. Lack of Quality Preparation		1	-.19	.45**	-.39**	.05	-.35*	-.07	.36*	-.09	.13	-.33*	-.29	.27*	.17	.56**	.22	.09
3.Communication			1	-.32**	.49**	.13	.62**	.28	-.48**	.29	.06	.54**	.38*	.07	.17	.09	-.17	-.04
4. Lack of Understanding				1	-.17	.01	-.32*	.28	.18	.001	.08	-.22	-.03	.20	-.05	.10	.31	.25
5.Support Network					1	.23	.63**	.31*	-.27	.35*	.16	.26	.07	-.05	-.06	-.22	-.04	-.03
6.Challenging and supportive environment						1	.13	-.09	-.25	-.08	-.05	.005	-.03	.07	-.009	-.16	-.12	-.02
7. Long-termDevt. Fund.							1	.22	-.39*	.21	.09	.39*	.22	-.10	.21	-.07	.05	.007
8.Intrinsic Goals								1	.03	.35*	.05	.35*	.37*	-.04	-.008	.06	.24	.14
9.Extrinsic Goals									1	-.10	.01	-.11	-.28	-.005	.003	.40**	.01	.005
10.Autonomy										1	.02	.49**	.37*	-.01	.09	-.17	.03	.22
11.Competence											1	-.09	-.10	.30	.009	.08	-.13	-.02
12.Relatedness												1	.57**	-.15	.01	-.13	-.15	.001
13.Mast.-Appr.													1	.002	.002	-.11	-.06	.09
14.Mast.-Avoid.														1	.22	.49**	.14	-.12
15.Perf.-Appr.															1	.36*	.12	.14
16.Perf. Avoid.																1	.13	-.12
17. Commitment																	1	.16
18. Confidence																		1

Note. Devt.= Development, Fund.= Fundamentals, Appr. = Approach, *p<0.05, **p<0.01

The initial analysis of the data included descriptive statistics, correlation, and internal consistency. In addition, hierarchical regressions were conducted.According to the literature if the sample is bigger than 104 + m (where m= number of the predictors used for the hierarchical regressions); the sample is considered to be satisfactory (Green, 1991). In order to control the effects of age and gender those variables were entered in the first step of the regression equation. In the second step of the hierarchical regressions the basic psychological needs (autonomy, relatedness, and competence) were used. The third step included the seven factors from the TDEQ and in the fourth step commitment along with confidence used to predict intrinsic and extrinsic goals.

The second set of the regressions used the goal achievements as predictors for intrinsic and extrinsic after controlling for age and gender. Additionally, a third step was also used combined with confidence and commitment. The third set of the regressions equations age and gender were entered in the first step and the factors of the TDEQ were entered in the second step to predict commitment and confidence. The last set of the regression equations used the seven factors of the TDEQ in order to predict the four achievement goals and in the second step the 7 factors, commitment and confidence were used as independent variables for the four achievements goals.

Results

Participants reported that the TDE gives emphasis on their long-term development (*M*= 4.7, *SD* = 0.46) had a sound communication (*M*=4.2, *SD* = 0.76) and support network (*M*=4, *SD* = 0.81) for the athletes and finally provided long-term fundamentals (*M*=4.3, *SD* = 0.7). In addition, athletes reported a moderate challenging supportive environment (*M*=3.65, *SD* = 0.64). Athletes were also satisfied with their quality preparation and the understanding since they stated (*M*=2.6, *SD* = 0.69) for lack of quality preparation and (*M*=2.93, *SD* = 0.94) for lack of understanding.Athletes also stated high intrinsic goals (*M*=6, *SD* = 1.1), high psychological needs satisfaction for autonomy (*M* = 5.7, *SD* = 0.8) and relatedness (*M*=5.7, *SD* = 1).

Additionally, athletes reported moderate extrinsic goals (*M*=4.3, SD = 1.2), competence (*M*=4, *SD* = 1). Regarding the achievement goals, athletes indicated high mastery approach (*M*=6.1, *SD* = 1), performance approach (*M*=5.1, *SD* = 1.4) and moderate mastery-avoidance (*M* = 4.4, *SD* = 1.7) and performance-avoidance (*M*=4.2. *SD* = 2).Finally, athletes described themselves as very confident (*M*=4, *SD* = 0.79) and moderately committed (*M*=2.5, *SD* = 0.46).

Table 1 represents the correlations between the 7 factors of the TDEQ and the basic psychological needs, intrinsic/extrinsic goals, achievement goals, commitment, and confidence. Firstly, long-term development focus had a strong positive correlation with relatedness, a moderate positive correlation with intrinsic goals and mastery-approach. In addition, long-term development focus had a moderate negative relationship with extrinsic goals. Lack of quality preparation had a strong positive correlation with performance- avoidance goals and it was moderately correlated with extrinsic goals, and mastery-avoidance. Lack of quality preparation was also negatively associated with relatedness. Communication had a moderate positive correlation with relatedness and a small positive relationship with mastery-approach. Moreover, communication had a moderate negative correlation with extrinsic goals. Support network had a small positive correlation with intrinsic goals and autonomy. Long-term development fundamentals were positively correlated with relatedness and negatively associated with extrinsic goals.

Preliminary analysis did not reveal any issues of multicollinearity, the Durbin- Watson was between 1.5 and 2.3 which are the acceptable values. The tolerance values ranged between 0.24 and 0.99, predictors with tolerance values lower than 0.2 need closer inspection (Menard, 2002). Therefore, the analysis satisfies the assumption of independence of errors.

Environmental Predictors of Intrinsic and Extrinsic Goals

As shown in table 2 there was no effect on intrinsic goals by age or gender in the first step of the regression. In the second step, the three psychological needs were entered, and no significant effect was found. In the third step, commitment was a predictor for intrinsic goals, $\Delta R^2 = 0.10$, *p*= .04. In the fourth step, the seven factors of the TDE were included and a significant effect was found, $\Delta R^2 = 0.23$, *p*= 0.05. The predictor of intrinsic goals was long-term development focus, *β*= 0.61, *p*= .04. As for extrinsic goals, gender had a significant effect onextrinsic goals in the first step of the regression, *β*= 0.38, *p*= .04. In the second step the three psychological needs were entered with no significant effect. In the third step commitment and confidence had no significant effect either. In the fourth step lack of quality preparation (*β*= 0.5, *p*= .02) was positive predictor of extrinsic goals and communication was a negative predictor of extrinsic goals, *β* = -.58, *p*= .02.

Table 2. Environmental Predictors of Intrinsic and Extrinsic goals

	Intrinsic Goals			Extrinsic Goals		
Step 1	B	SE B	β	B	SE B	β
Age	.05	.10	.1	-.01	.11	-.24
Gender	-.82	.55	-.28	1.2	.58	.38*
Step 2						
Age	.06	.1	.11	-.009	.12	-.01
Gender	-.546	.55	-.16	.1.2	.64	.37
Competence	.09	.18	.07	.04	.2	.03
Relatedness	.24	.2	.21	-.01	.23	-.01
Autonomy	.32	.26	.22	.01	.3	.006
Step 3						
Age	.09	.1	.17	-.02	.12	-.03
Gender	-.66	.56	-.23	1.3	.68	.41
Competence	.16	.17	.14	.03	.21	.02
Relatedness	.32	.2	.29	-.007	.24	-.006
Autonomy	.22	.26	.15	-.02	.32	-.01
Commitment	.49	.23	.34*	-.09	.28	-.05
Confidence	.04	.4	.01	.29	.49	.1
Step 4						
Age	.09	.1	.16	.0001	.11	.0001
Gender	-.52	.58	-.18	.69	.65	.21
Competence	-.1	.17	-.01	-.01	.19	-.01
Relatedness	.06	.24	.53	.54	.27	.43
Autonomy	.2	.26	.14	-.17	.29	-.11
Commitment	.42	.23	.29	-.24	.26	-.15
Confidence	-.19	.39	-.7	.21	.44	.07
Devt. focus	1.5	.72	.61*	-.28	.81	-.1
Lack of quality preparation	-.15	.33	-.09	.92	.37	.5*
Communication	.004	.35	.003	-.98	.39	-.58*
Lack of understanding	.52	.21	.42	-.2	.24	-.15
Support network	.18	.31	.12	.61	.35	.38
Supportive environment	-.37	.27	-.21	-.51	.3	-.25
Devt. Fund.	-.36	.42	-.22	-.26	.47	-.14

Note. Devt.= Development, Fund.= Fundamentals, *p<0.05.

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Environmental Predictors of Achievement Goals

In this set of the regression analysis (table 3), the four achievement goals were entered as the independent variables using the factors of the TDE in the second step, after controlling for age and gender. Gender had a significant effect on performance-avoidance goals, $\beta= 0.52$, $p<.01$. The seven factors of the TDE were entered in the second step. Lack of quality preparation was a negative predictor of mastery-approach goals ($\beta= -.46$, $p<.05$). As for mastery-avoidance goals long term development focus ($\beta= -.62$, $p<.05$) and communication ($\beta= -0.57$, $p<.05$) were negative predictors of mastery-avoidance goals. Lack of quality preparation ($\beta=0.51$, $p<.01$) and gender ($\beta=0.42$, $p<.05$) were positive predictors of performance-avoidance goals. In the third step commitment and confidence combined with the seven factors of the TDE were entered after controlling first for any effect of age and gender. Lack of quality preparation was a negative predictor for mastery approach goals, ($\beta=-.49$, $p<.05$) and positively predicted performance-avoidance goals ($\beta=0.52$, $p<.01$). Finally, communication was a negative predictor of mastery-avoidance goals ($\beta= -.058$, $p<.05$).

Table 3. Environmental Predictors of Achievement goals

	Intrinsic Goals			Extrinsic Goals		
Step 1	B	SE B	β	B	SE B	β
Age	.05	.1	.1	-.01	.11	-.02
Gender	-.82	.55	-.28	1.2	.58	.38*
Step 2						
Age	.03	.11	.06	.12	.1	.2
Gender	-.7	.61	-.24	.57	.58	.18
Mast.- Appr.	.4	.18	.34*	-.26	.17	-.2
Mast. - Avoid.	-.01	.12	-.02	-.24	.11	-.33
Perf.- Appr.	.01	.14	.01	-.19	.13	-.21
Perf.- Avoid.	.04	.11	.07	.36	.11	.56**

Note. Mast.= Mastery, Appr.= Approach, Perf. = Performance, Avoid.= Avoidance, *p<0.05,**p<0.01.

Environmental Predictors of Commitment and Confidence

The dependent variables for this set of regression were commitment and confidence after controlling for age gender in the first step. In the second step of the regression model the factors of the TDEQ were entered and long-term development fundamentals was a positive predictor of commitment, $\beta= 0.55$, $p=.05$. However, no significant predictors were found for confidence as shown in table 4.

Table 4. Environmental Predictors of Commitment and Confidence

	Commitment			Confidence		
Step 1	B	SE B	β	B	SE B	β
Age	-.06	.7	-.16	.02	.04	.09
Gender	.45	.38	.22	-.31	.22	-.27
Step 2						
Age	-.01	.08	-.03	.03	.05	.14
Gender	-.01	.43	-.009	-.49	.26	-.42
Devt. focus	-.66	.5	-.39	.12	.3	.12
Lack of quality preparation	.22	.24	.19	.08	.14	.12
Communication	-.12	.27	-.11	-.13	.16	-.22
Lack of understanding	.21	.16	.25	.14	.09	.28
Support network	.03	.22	.03	-.07	.13	-.12
Supportive environment	-.13	.2	-.11	-.26	.12	-.03
Devt. Fund.	.62	.31	.55*	.15	.18	.24

Note. Devt.= Development, Fund.= Fundamentals, *p<0.05.

Goal Orientation Predictors of Intrinsic and Extrinsic Motivation

The four achievement goals were entered as dependent variables for intrinsic and extrinsic goals after controlling for age and gender. Four achievement goals had a significant effect on intrinsic goals, $\Delta R^2 = 0.11$, $p=.003$. The only predictor of intrinsic goals was mastery- approach, $\beta= 0.34$, $p=.04$.

Additionally, the four achievement goals had significant effect on extrinsic goals, $\Delta R^2 = 0.25$, $p= .01$. In the first step of the regression gender had a significant effect on extrinsic goals ($\beta= 0.38$, $p= .04$). In the second step of the regression model performance-avoidance was a significant predictor, $\beta= 0.56$, $p<.01$ of extrinsic goals (Table 5).

Table 5. Goal Orientation Predictors of Intrinsic and Extrinsic Motivation

	Mastery- Approach			Mastery- Avoidance			Performance- Approach			Performance- Avoidance		
Step 1	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	B
Age	.08	.09	.17	.02	.15	.02	.07	.13	.1	-.28	.17	-.28
Gender	-.52	.48	-.21	1.3	.81	.3	.59	.68	.16	2.6	.89	.52**
Step 2												
Age	.007	.09	.014	.07	.16	.09	.16	.14	.24	-.19	.16	-.19
Gender	.025	.5	.1	1.2	.91	.28	.33	.8	.09	2.1	.88	.42*
Devt. focus	.96	.58	.45	-2.3	1	-.62*	.47	.92	.15	-.39	1.02	.08
Lack of quality Prep.	-.67	.28	-.46*	.65	.5	.26	.56	.44	.27	1.4	.49	.51**
Communication	.48	.31	.36	-1.3	.56	-.57*	.11	.49	.05	1.09	.54	.4
Lack of understanding	.33	.18	.31	-.27	.33	-.14	-.12	.29	-.07	-.19	.32	-.09
Support network	-.45	.26	-.36	.48	.47	.22	-.32	.41	-.18	-.16	.46	-.06
Supportive environment	-.10	.23	-.06	.22	.42	.08	-.09	.37	-.04	-.66	.41	-.21
Long-term Devt. Fund.	-.19	.35	-.13	-.06	.64	-.02	.69	.56	.34	-.07	.62	-.02
Step 3												
Age	.002	.09	.005	.08	.17	.09	.15	.15	.21	-.18	.17	-.18
Gender	.34	.54	.14	1.2	.98	.28	.62	.85	.17	1.9	.96	.39*
Devt. focus	1.02	.61	.47	-2.1	1.1	-.57	.53	.96	.17	-.31	1.09	-.07
Lack of quality Prep.	-.7	.29	-.49*	.59	.53	.23	.46	.45	.22	1.5	.51	.52**
Communication	.52	.32	.39	-1.3	.58	-.58*	.21	.5	.11	1.05	.57	.39
Lack of understanding	.28	.2	.26	-.22	.36	-.17	-.24	.31	-.15	-.16	.35	-.07
Support network	-.44	.27	-.36	.47	.48	.21	-.29	.42	-.16	-.18	.47	-.07
Supportive environment	-.08	.24	-.05	.26	.44	.96	-.05	.38	-.02	-.66	.43	-.21
Long-term Devt. Fund.	-.28	.39	-.2	-.23	.71	-.09	.48	.61	.23	-.05	.69	-.01
Commitment	.1	.21	-.08	.28	.39	.12	.19	.33	.1	.03	.38	.01
Confidence	.18	.35	.08	-.02	.64	-.007	.57	.55	.18	-.29	.62	.06

Note. Devt.= Development, Prep. = preparation, Fund.= Fundamentals, *p<0.05, **p<0.01.

Discussion

Long-term development focus had a positive correlation with relatedness, intrinsic goals, mastery-approach goals, and a moderate negative relationship with extrinsic goals. Research conducted with Singaporean athleteshas shown that long-term development focus is a predictor for both mastery approach goals (Wang et al., 2011, 2016) and performance approach goals (Wang et al., 2016).Mastery-approach goals have shown to support deep conceptual processing and engagement (Jagacinski et al., 2001).In the current study mastery-avoidance goals were negatively associated with long-term development focus.Interestingly, Wang et al. (2016) found that this relationship between long term development focus and goal avoidance was mediated by perceived competence, highlighting the need to be mindful of individual differences in athletes, and act accordingly. Furthermore, it was shown that long-term development focus predicts intrinsic goals pursuit which also supports the findings from young athletes competing in Singapore (Wang et al., 2011). It has been suggested that the structure of learning environments in the education domain can influence student goal adoption (Ames, 1992), and there is an increasing evidence base that long term development focus has a significant role in facilitating useful sport motivation. Consequently, the extent to which long-term development focus is promoted needs to be taken into consideration by coaches and administrators when designing an effective talent development program (Henriksen et al., 2010; MacNamara et al.,2007,2010).

Lack of quality preparation had a strong positive correlation with performance-avoidance goals and was moderately correlated with extrinsic goals and mastery-avoidance goals. Lack of quality preparation was negatively associated with relatedness and was a negative predictor of mastery-approach goals. Lack of quality preparation was the most significant predictor (*p*<.01) of performance-avoidance goals and similarly to Wang et al. (2011) predicted positively extrinsic goals.Perhaps unsurprisingly, these results reinforce the findings from

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Martindale et al. (2013) suggesting that quality preparation of athletes is a top priority for facilitating effective athlete progression within the talent development environment.

Communication had a positive correlation with relatednessand mastery-approach goals. Additionally, communication was a negative predictor of extrinsic and mastery-avoidance goals. In line with this, Wang et al. (2011) found showed that communication was a negative predictor of mastery-avoidance goals. Previous research suggests that the positive communication by parents can increase the chance of young athlete to stay involved in sport even at elite level (Weiss & Hyashi, 1995). Indeed, Wang et al. (2016) specifically recommends strong coach-athlete communication as a method of facilitating mastery approach goals, particularly for those athletes with high perceived competence. Support network was positively correlated with intrinsic goals and autonomy. As for long-term fundamentals, they had a positive association with relatedness and were negatively related with extrinsic goals.However, no correlation was found between the features of the TDE and commitment and confidence.Interestingly, athlete understanding was not shown to predict any of the motivational or confidence factors, even though it has been shown to be a key predictor of athlete progression previously (Martindale et al., 2013).

In the study by Wang et al. (2011) it was found that relatedness was negatively associated with extrinsic goal pursuit. Previously, it has also been shown that autonomy was negatively associated with extrinsic goals (Vansteenkiste et al., 2007). This finding is in contrary with the findings of the study conducted in Singapore in which higher autonomy was found to be linked with extrinsic goal pursuit (Wang et al., 2011). On the other hand, in the current study no significant results were revealed regarding the relationship of the basic psychological needs with intrinsic and extrinsic goals.As for commitment and confidence, it was identified that commitment was a positive predictor of intrinsic goals and it was also predicted by long-term development fundamentals which supports the contention that it is an essential psychological characteristic for effective development. Perhaps surprisingly, no features of the TDE predicted confidence. This is of interest because confidence has been shown to be a key predictor of success and development in sport (e.g., Hays et al., 2009). However, Collins et al. (2014) showed that for some athletes, it is a lack of confidence that drives them onto greater heights. Also, Wang et al. (2016) found that perceived competence played a mediating role in the development environment. This is clearly an area for future research.

Previous research has examined the effect of goal content on performance in the academic domain (Vansteenkiste et al., 2007). Generally, intrinsic goals are task oriented while extrinsic goals are ego oriented. According to the findings of the current study mastery approach predicted positively intrinsic goals while performance avoidance predicted extrinsic goals pursuit. Those results support the findings from Singapore and are also consistent with the relevant literature. Elliot (2005) identified that mastery approach goals contribute to positive effects on athletes, while mastery avoidance was proposed to produce patterns such as worry or disorganization.

The key features of the TDE in relation to predicting healthy motivational constructs appear to be long-term development focus, quality preparation, long-term fundamentals, communication, and support network. These features were found to promote intrinsic goals, relatedness, autonomy, commitment and mastery-approach goals, arguably key outcomes for a talent development program. Furthermore, the findings of the current study showed that environmental characteristics are stronger predictors of motivational constructs in comparison to personal characteristics. Although, as pointed out by Wang et al. (2016), constructs such as perceived competence may play a significant mediating role in the effectiveness of TDEs. This has important implications for the role of the coach and influential significant others in any TDE context.

Conclusions

The findings of this study showed that the TDE is associated with athletes' goal orientation, their motivation, and some key psychological characteristics. More specifically, long-erm development fundamentals was positively associated with commitment and long-term focus was positively associated with intrinsic goals. Interestingly, this study showed that key features of the TDE are better predictors of motivational outcomes thanindividual athlete characteristics.While there were some limitations of the study, such as relatively small (albeit statistically adequate) numbers, the findings were similar to previous work carried out with Asian populations.However, more work examining larger populations and other cultures is necessary to improve understanding in this area, particularly around the area of confidence and TDEs. This study provides some insight into what type of environments are important for developing successful young people in sport across different cultures. As such, the current research has contributed significantly to our current knowledge in the area of talent development and has implications beyond a sport development and physical activity lifestyle focus. As such, it will help us to understand some of the important features of our experiences that facilitate the development of successful people. It is hoped that this knowledge can go some way inhelping provide coaches, teachers, and parents the support required to develop young peoplemore effectively. In line with this, more work on understanding how key features of the TDE can be manipulated is important. Taking into account that commitment was found to be related with certain characteristics of the TDE such as long-term development fundamentalsandgiven the strong support for the role of personal characteristics in sport success, drop outand life

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achievement, more research is required regarding the relationship between features of the TDE and personal characteristics such as confidence, grit, mental toughness, and well-being.

Conflicts of interest
    The authors declare no conflict of interest.

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