

Talent identification and development in Germany – state of play and current tasks

Gefördert durch:



Bundesministerium
des Innern

aufgrund eines Beschlusses
des Deutschen Bundestages

An Institute of the Association
IAT/FES e. V.

Antje Hoffmann
Department of Junior Elite Sports



Strengths in German Talent Promotion System

- big talent pool (7.5 million members in sport clubs under 18)
- high amount of money inside the sport system
- strong club system
- promotion and support system for almost all sports (OTC, NTC, Elite sport schools, employment opportunities at army/police,...)

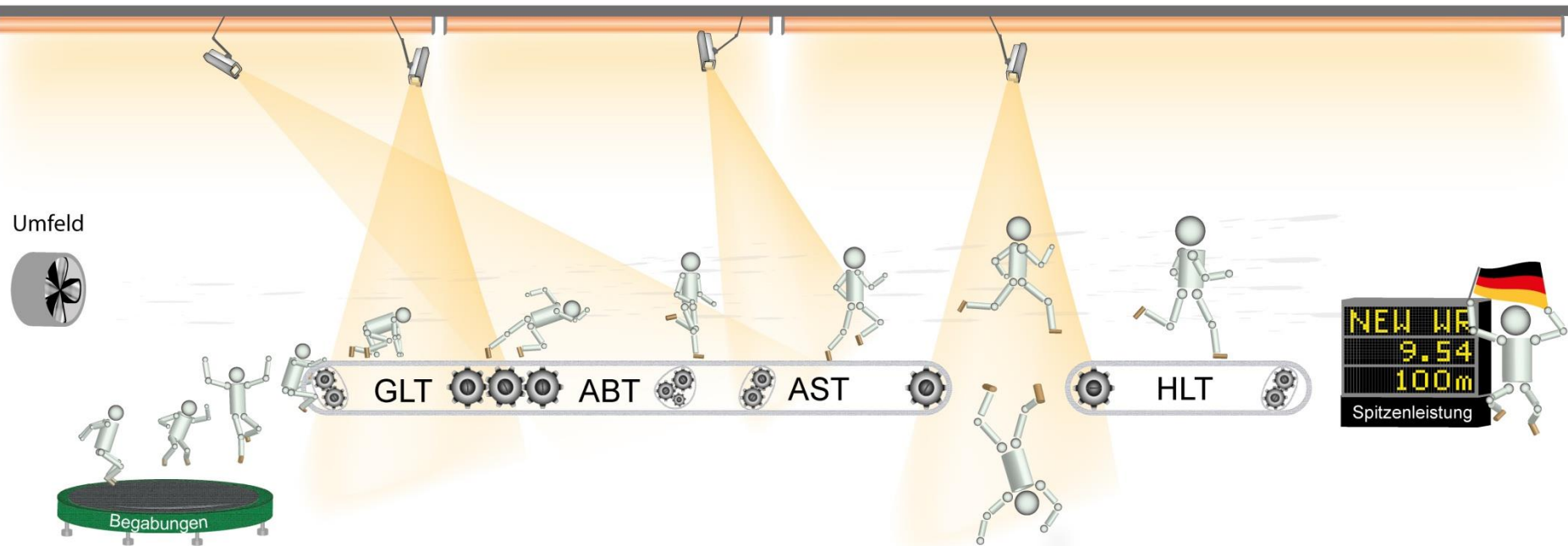


TID and TDE in Germany - challenges

- cutting point between federal and state responsibility
 - high number of stakeholders/involved institutions
 - need for management and coordination of the whole process
 - underrepresentation of TID/TDE in existing concepts
 - insufficient transfer of knowledge from theory to practice
 - promotion of early success
 - lack of open-mindedness, political will and courage to embrace change
-
- no generic system for talent search and identification => many fishermen competing
 - basic skills and prerequisites for peak performance remain underdeveloped
 - developmental athletes over-compete and under-train
 - copying of adult training and competition programs
 - focus often onto short-term outcome and not to the process
 - high dropout-rates at junior age
 - chronological age used in training and competition planning
 - best coaches at elite level, in JES often on voluntary base
 - competition system mostly interferes with LTAD

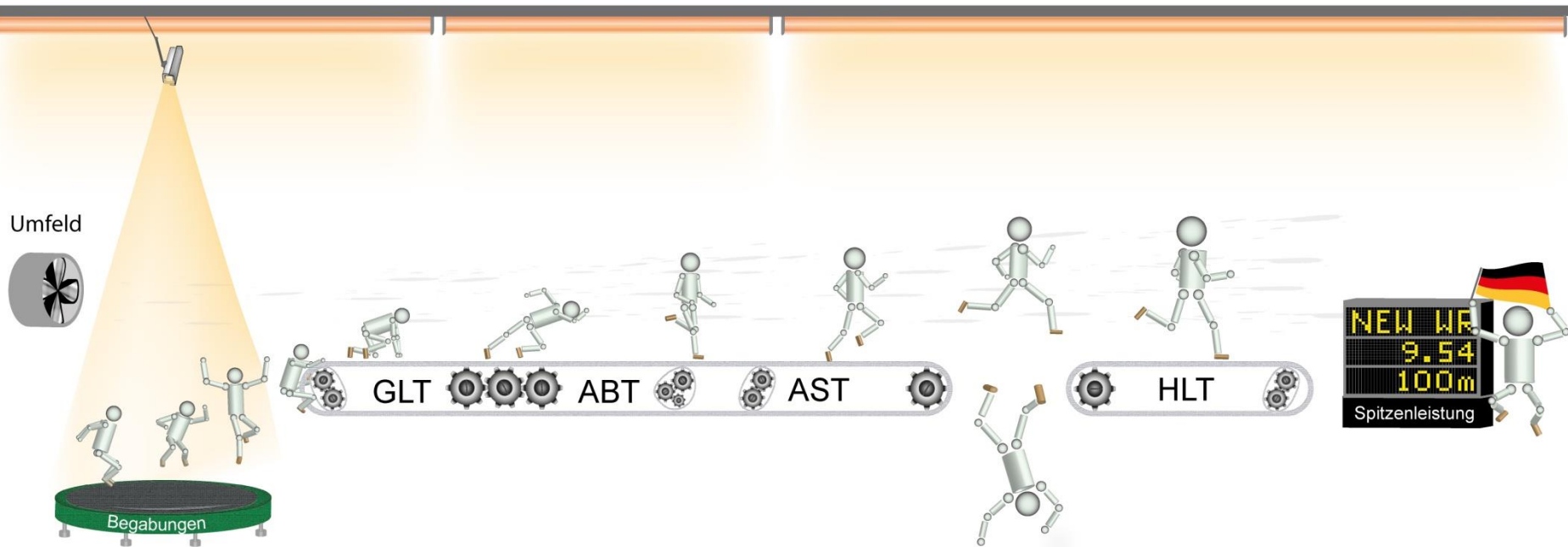
TID and TDE in Germany

Elite performance



TID and TDE in Germany - Requirements

Natural abilities



TID and TDE in Germany - Requirements

Natural abilities

3

TID and selection need to reflect performance disposition and capacity to develop.

Jigsaw puzzle of talent

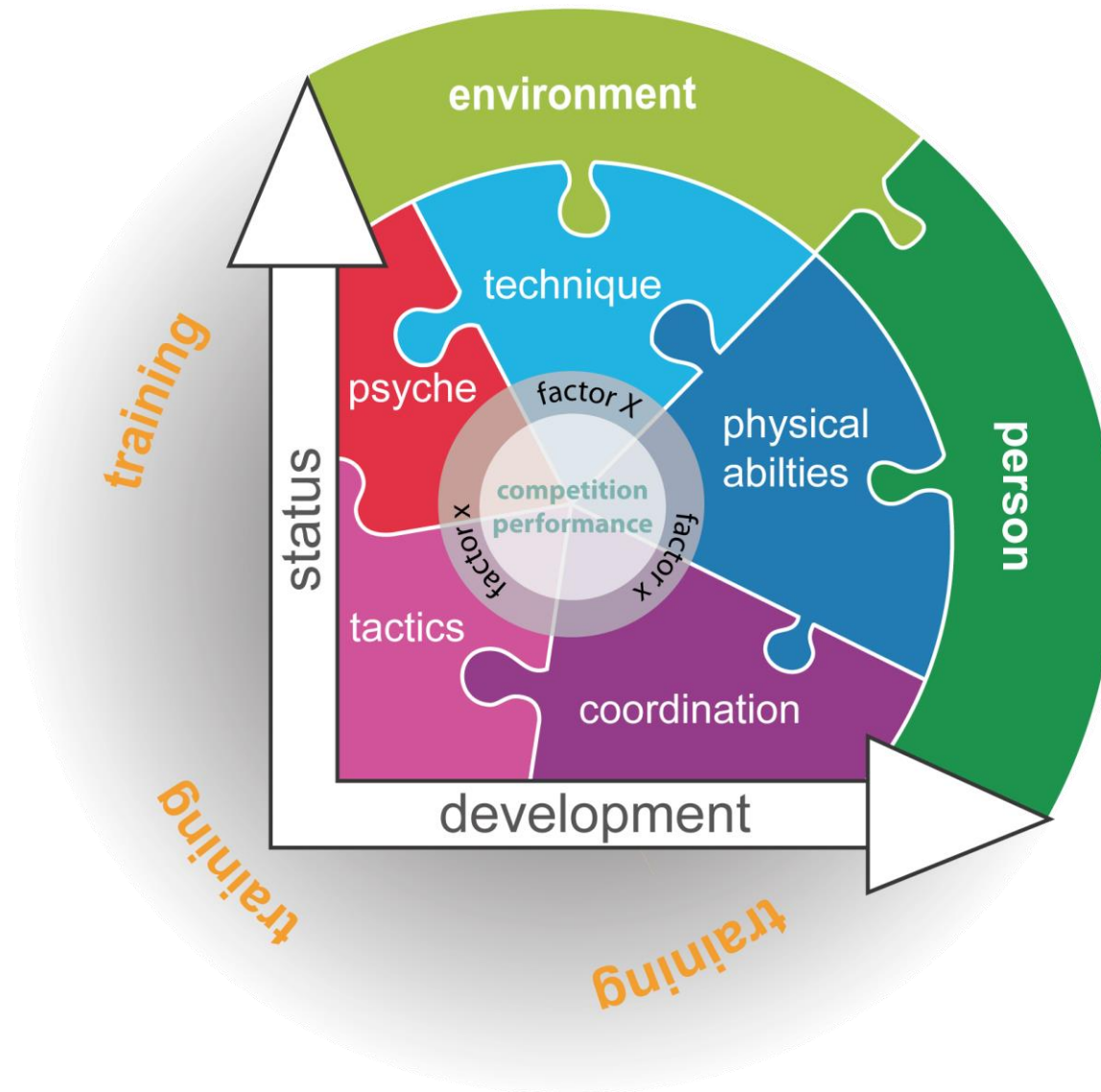
What kind of gifts
does talent need in
you?

What makes an
olympic champion?

Which environmental
factors are needed
for developing a
talent to peak
performance?

**Development of performance profiles and
instruments for TID in consideration of
complexity and dynamic of talent!**

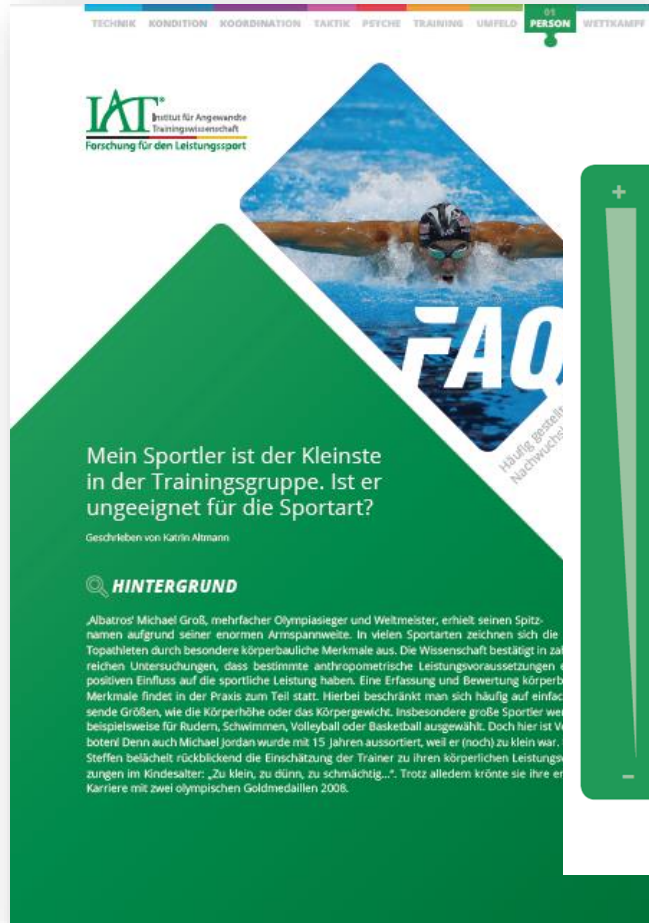
Jigsaw puzzle of talent



Wulff et al., 2017

Estimation of potential - anthropometrics

Altmann, 2017; Wulff et al., 2017



WEIBLICH

MÄNNLICH

+ Korrelationskoeffizient (R) zw. AK13 und AK18 -	Beckenbreite vs. Körperhöhe	Affenindex	+ geeignet zur Talentauswahl -
	Schulterbreite vs. Beckenbreite	Schulterbreite vs. Körperhöhe	
	Affenindex	Beckenbreite vs. Körperhöhe	
	Finale Körperhöhe	Plastikindex	
	Schulterbreite vs. Körperhöhe	Körperhöhe	
	Metrikindex	Finale Körperhöhe	
	Sitzhöhe vs. Körperhöhe	Sitzhöhe vs. Körperhöhe	
	Körpergewicht	Körpergewicht	
	Plastikindex	Schulterbreite vs. Beckenbreite	
	Körperhöhe	Metrikindex	
	Broca	Broca	

Entwicklungsstabilität anthropometrischer LV von der AK13 zur AK18

<http://nwls.sport-iat.de/>

Estimation of potential in boxing

athletes' profile

technique

speed

environment

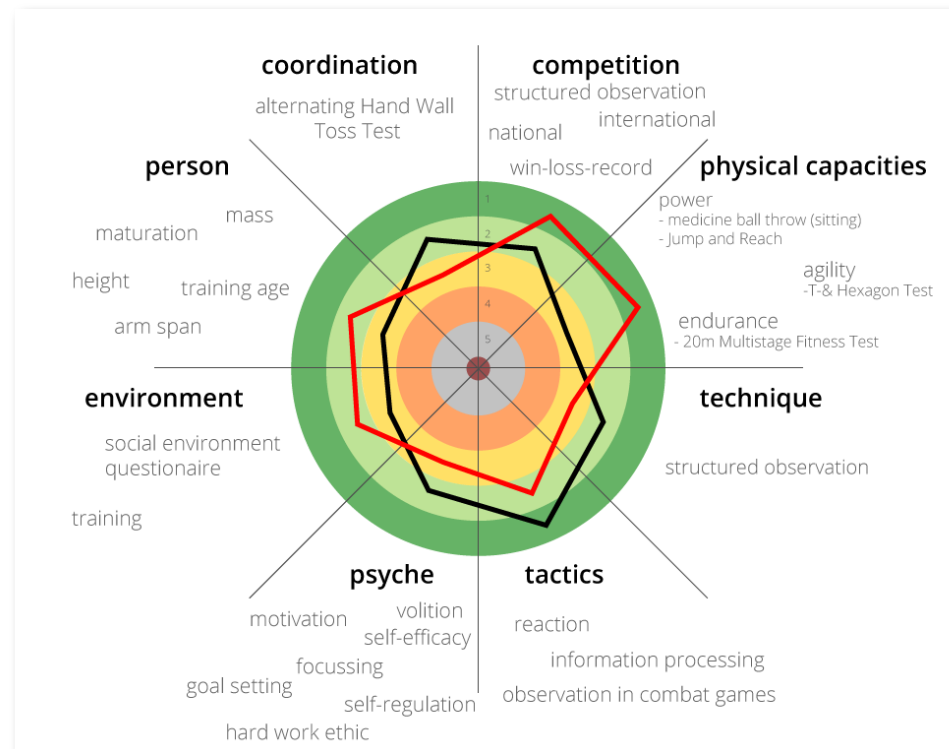
psyche

etc..



Joe
Jab

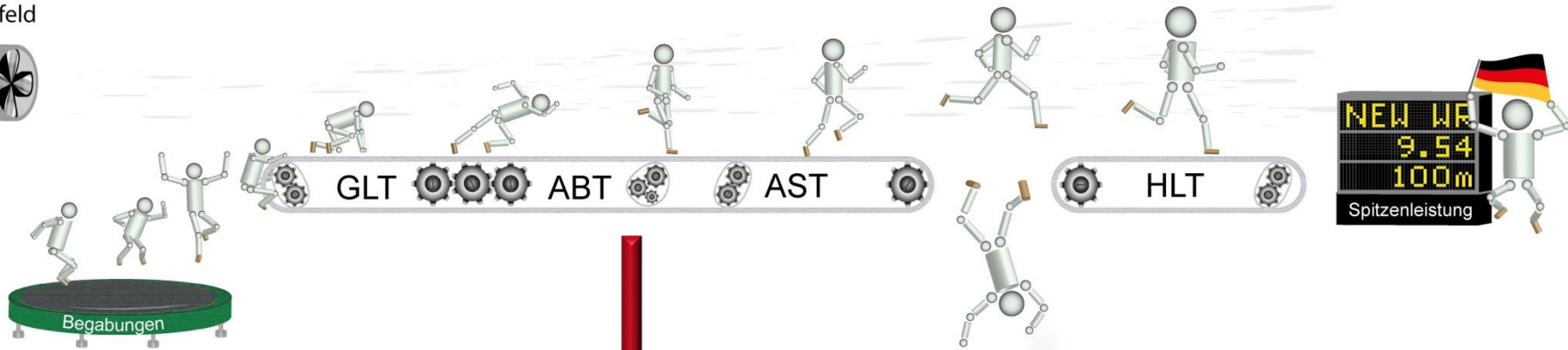
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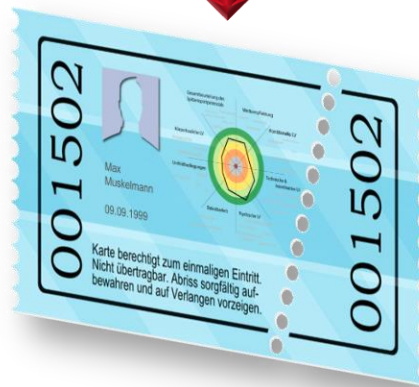
Walter, 2017; Wulff et al., 2017

Why do we need an performance profile?

Umfeld



Educational
function



Performance prerequi-
sites/training management

Estimation of potential in boxing

Lehrgang männlich (U15-U21) des DBV in [Ort] vom [Datum]

Stärken-Schwächen-Profil

Name: Max Mustermann

Alter: 14,79

biologischer Reifestatus: durchschnittlich entwickelt

Trainingsalter: 6,74 Jahre

Training/ Woche: 23,00 Stunden

Wettkampfaller: 4,91 Jahre

Kampfbilanz: S: 16 N: 4

Leistungs-voraussetzung

Test

Leistung

Gruppen-mittelwert

Anthropometrie

Körperhöhe [cm]

170,0

Körpermasse [kg]

70,3

Gewichtsklasse

66,0

Armspannweite [cm]

178,0

Koordination

Hand-Wand-Koordinationsstest

40

29

Hand-Wand-Koordinationsstest mit Beinbewegung (Bühnenzeit + Distanzen)

53

29

Kognition

einfache Reaktionsaufgabe [ms]

268

344

komplexe Reaktionsaufgabe [ms]

463

545

komplexe Reaktionsaufgabe [Fehler]

2

1

Differenz einfache und komplexe Reaktionsaufgabe [ms]

195

201

Zahnverbindungstest (1 bis 100)

69

53

Trainerurteil: "Kampfspeziell" (1 bis 5)

4,00

3,59

Technik-Taktik

Trainerurteil: Niveau im Training (1 bis 5)

2,50

3,07

Trainerurteil: Niveau im Sparring (1 bis 5)

2,99

2,87

Kondition

Medizinballstoßen Führung [m]

5,50

4,65

Medizinballstoßen Schugang [m]

6,50

5,11

Jump & Reach-Test [cm]

37

32

Hexagon-Test [s]

9,80

11,37

T-Test [s]

5,48

6,77

Levelauf [Level]

10,06

9,97

Beurteilung Technik-Taktik

Kampfkontrolle

5

4,5

4

3,5

3

2,5

2

1,5

1

0,5

0

Umstellungsfähigkeit

5

4,5

4

3,5

3

2,5

2

1,5

1

0,5

0

Tempowechsel

5

4,5

4

3,5

3

2,5

2

1,5

1

0,5

0

Varianz/effektivität: Verteidigung

5

4,5

4

3,5

3

2,5

2

1,5

1

0,5

0

Varianz/effektivität: Angriff

5

4,5

4

3,5

3

2,5

2

1,5

1

0,5

0

Handlungsdichte

5

4,5

4

3,5

3

2,5

2

1,5

1

0,5

0

Beinarbeit

5

4,5

4

3,5

3

2,5

2

1,5

1

0,5

0

Distanzverhalten

5

4,5

4

3,5

3

2,5

2

1,5

1

0,5

0

Training

Wettkampf

Bei Fragen oder Anmerkungen können Sie uns gern kontaktieren:

Nico Walter (Leistungssportreferent Nachwuchs im DBV; Projekt DELTA Boxen)

E-Mail: walter@iat.uni-leipzig.de

DELTA

Deutschland entwickelt Talente

Name: Max Mustermann

Alter: 14,79

biologischer Reifestatus: durchschnittlich entwickelt

Landesverband: MV

Eliteschule: ja

Internat: nein

Kader: D/C

Migrationshintergrund: ja

Verletzungen/ Gesundheit: keine

Brake Körperhöhe (Gesamthöhe: +6,8cm)

179

Leistungs-voraussetzung

Test

Leistung

Gruppen-mittelwert

Anthropometrie

Körperhöhe [cm]

Körpermasse [kg]

Gewichtsklasse

Armspannweite [m]

Koordination

Hand-Wand-Koordinationsstest

Hand-Wand-Koordinationsstest mit Beinbewegung (Bühnenzeit + Distanzen)

Kognition

einfache Reaktionsaufgabe [ms]

komplexe Reaktionsaufgabe [ms]

komplexe Reaktionsaufgabe [Fehler]

Differenz einfache und komplexe Reaktionsaufgabe [ms]

Zahnverbindungstest (1 bis 100)

Trainerurteil: "Kampfspeziell" (1 bis 5)

Technik-Taktik

Kampfkontrolle (1 bis 5)

Distanzverhalten (1 bis 5)

Handlungsdichte (1 bis 5)

Beinarbeit (1 bis 5)

Varianz/effektivität: Angriff (1 bis 5)

Varianz/effektivität: Verteidigung (1 bis 5)

Tempowechsel (1 bis 5)

Umstellungsfähigkeit (1 bis 5)

Kampfkontrolle (1 bis 5)

Distanzverhalten (1 bis 5)

Handlungsdichte (1 bis 5)

Beinarbeit (1 bis 5)

Varianz/effektivität: Angriff (1 bis 5)

Varianz/effektivität: Verteidigung (1 bis 5)

Tempowechsel (1 bis 5)

Umstellungsfähigkeit (1 bis 5)

Kondition

Medizinballstoßen Führung [m]

Medizinballstoßen Schugang [m]

Jump & Reach-Test [cm]

Hexagon-Test [s]

T-Test [s]

Levelauf [Level]

Psychologie

Sebstregulation

3,50

3,21

Vorfähigkeit

5,00

3,67

Fokussierung

4,00

3,61

Disziplin

4,33

3,61

Sebstvertrauen

5,00

3,63

Motivation

4,33

3,51

Zielsetzung

4,50

3,53

Gesamtwert

4,38

3,60

Umfeldfaktor

Teilaspekt

Bedeutungs-zuschreibung

Ausprägung

Allgemeine Lebensqualität: (1=sehr gut, 5=sehr schlecht)

2,1

langfristige sportliche Entwicklung

regelmäßiges Feedback

5

4

Fokus auf langfristige Ausbildung

5

4

individuell zugeschnittenes Training

6

0

regelmäßige Kommunikation mit dem Trainer

innerhalb des Trainingsprozesses über persönliche Dinge

4

3

außerhalb des Trainingsprozesses über persönliche Dinge

3

2

innerhalb des Trainingsprozesses über Sport betreffende Dinge

5

4

außerhalb des Trainingsprozesses über Sport betreffende Dinge

4

3

unterstützendes Netzwerk

Zugang zu Experten

3

3

Koordination Sport & Schule/Ausbildung/Beruf

5

4

emotionale Unterstützung durch nahestehende Personen

3

4

Ratschläge von nahestehenden Personen

4

4

materielle Unterstützung durch nahestehende Personen

5

3

Sonstige

Kontakt mit Spitzsportlern im Verein

3

5

unterstützendes Trainingsklima

4

3

gute Infrastruktur

5

2

Leistungsentwicklung

Prozent von Gesamtpunktzahl der jeweiligen Kategorie

1

0,9

0,8

0,7

0,6

0,5

0,4

0,3

0,2

0,1

0

Koordination

Kognition

Technik-Taktik

Kondition

Psychologie

Umfeld

2016

2018

Testdatum

Bei Fragen oder Anmerkungen können Sie uns gern kontaktieren:

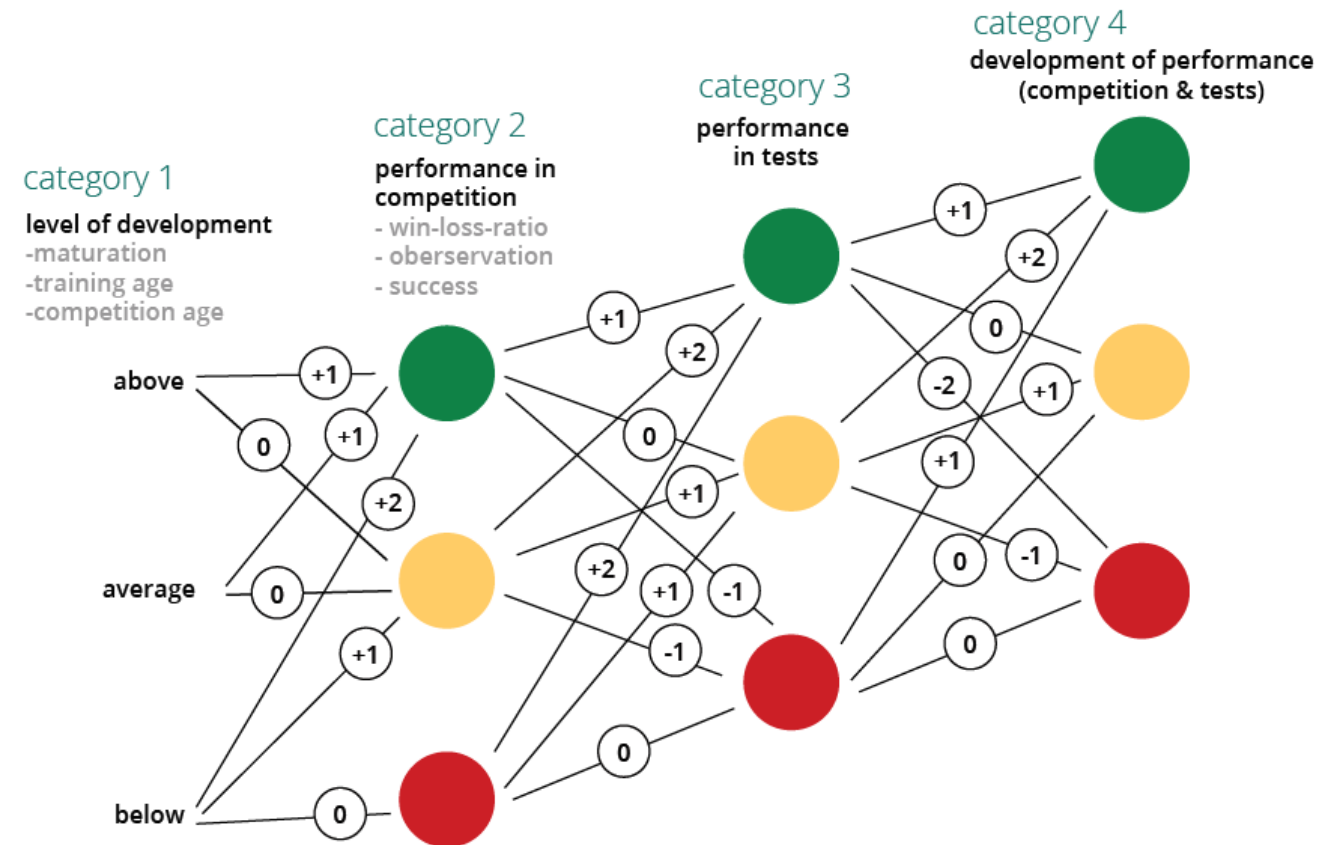
Nico Walter (Leistungssportreferent Nachwuchs im DBV; Projekt DELTA Boxen)

E-Mail: walter@iat.uni-leipzig.de

DELTA

Deutschland entwickelt Talente

Estimation of potential in boxing



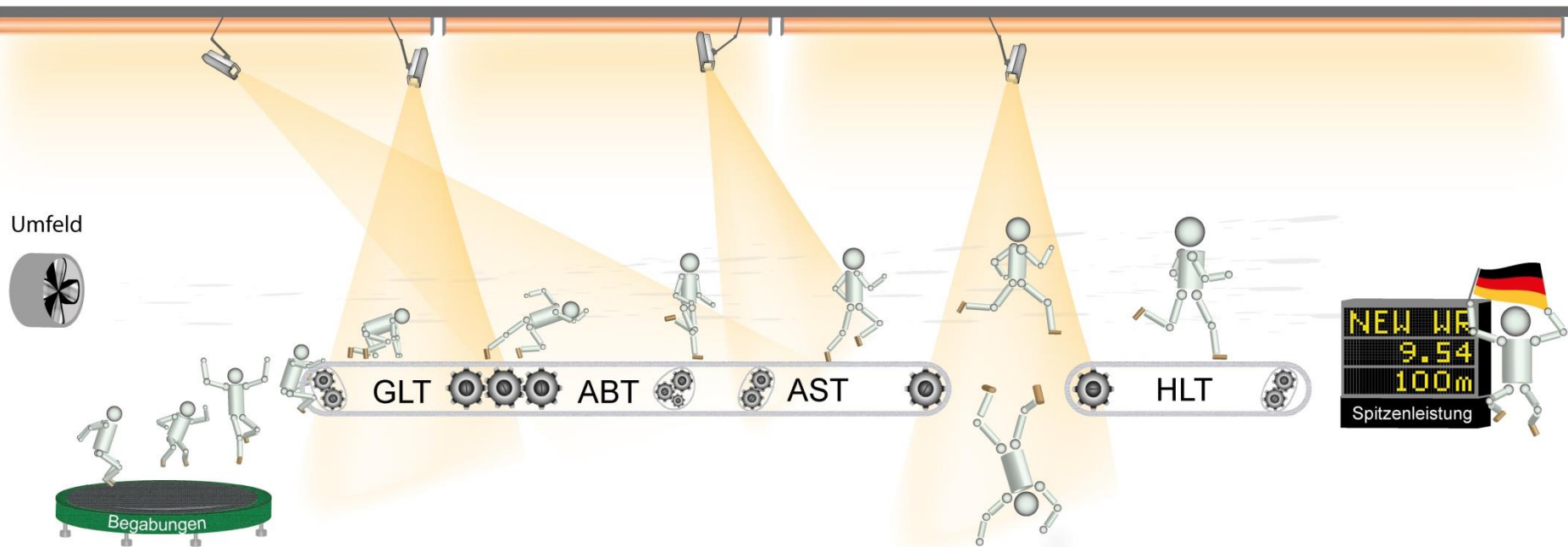
Potential of your athlete
(aggregate)

> 2 Boxing Talent
> 1 Stay tuned!
≤ 1 Have fun!

Walter, 2017; Wulff et al., 2017

TID and TDE in Germany - Requirements

Talent development



TID and TDE in Germany - Requirements

Talent development

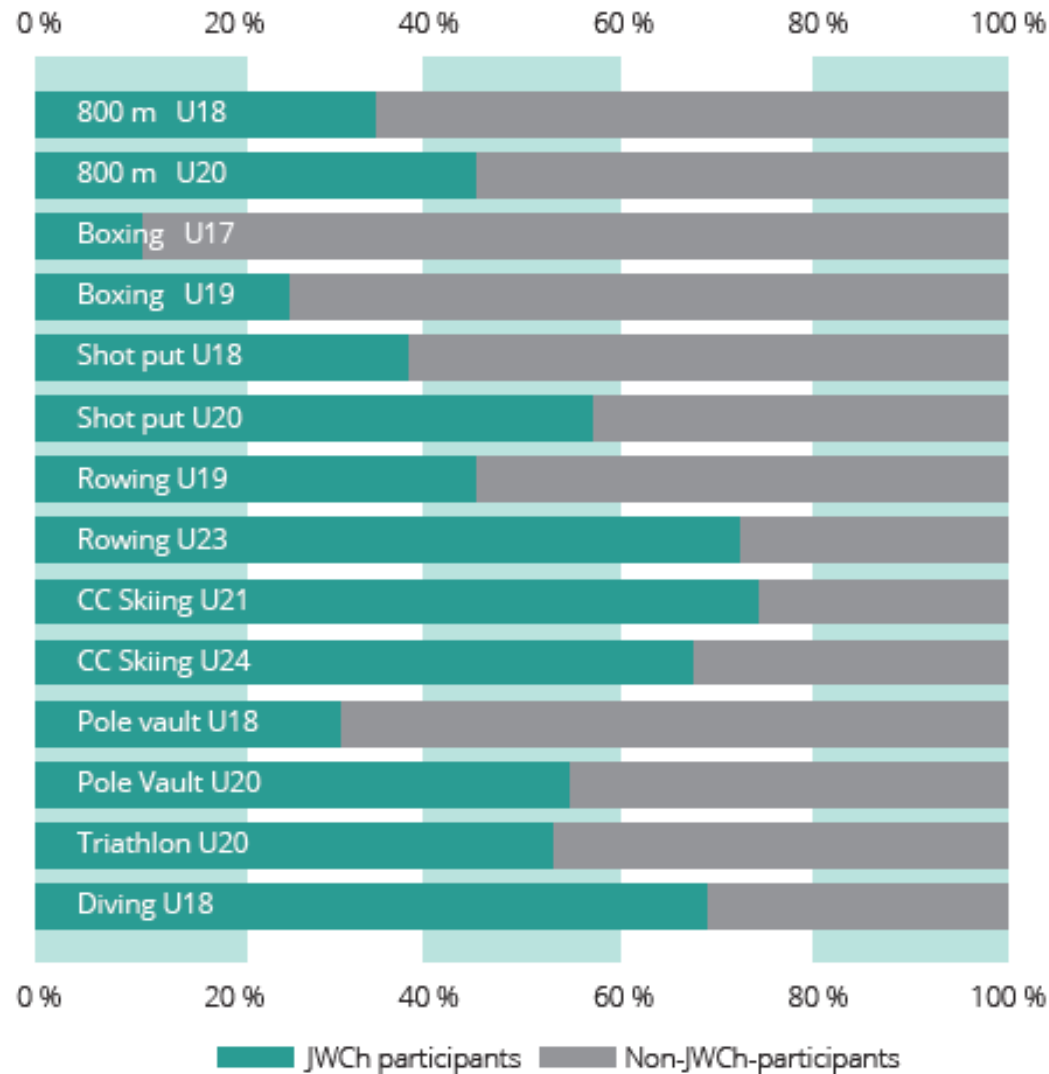
4

Numerous ways can lead to the top of elite sports – and have to be taken into account for successful talent development.

5

Talent development needs a closer alignment with biological age instead of chronological age, solely.

Junior success as prerequisite for elite success?

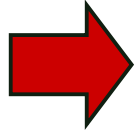


© Wulff, 2017

Percentage of JWCH-Participants in Elite Sports

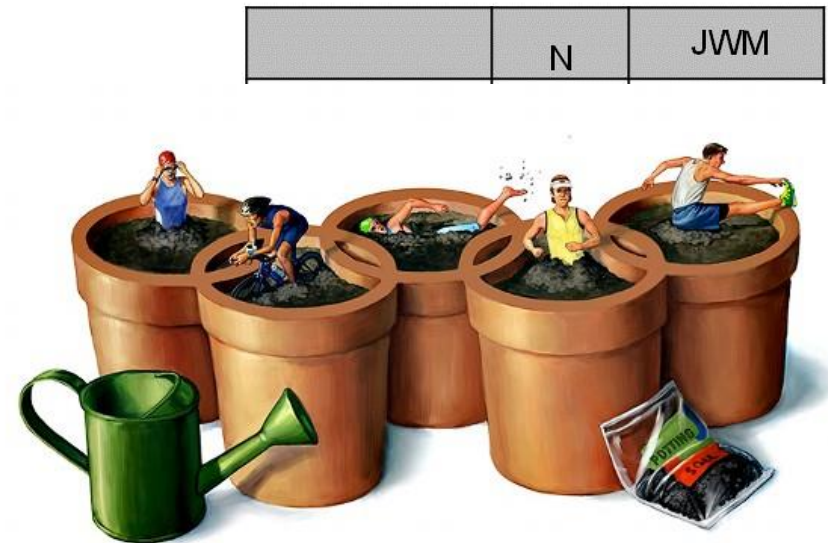
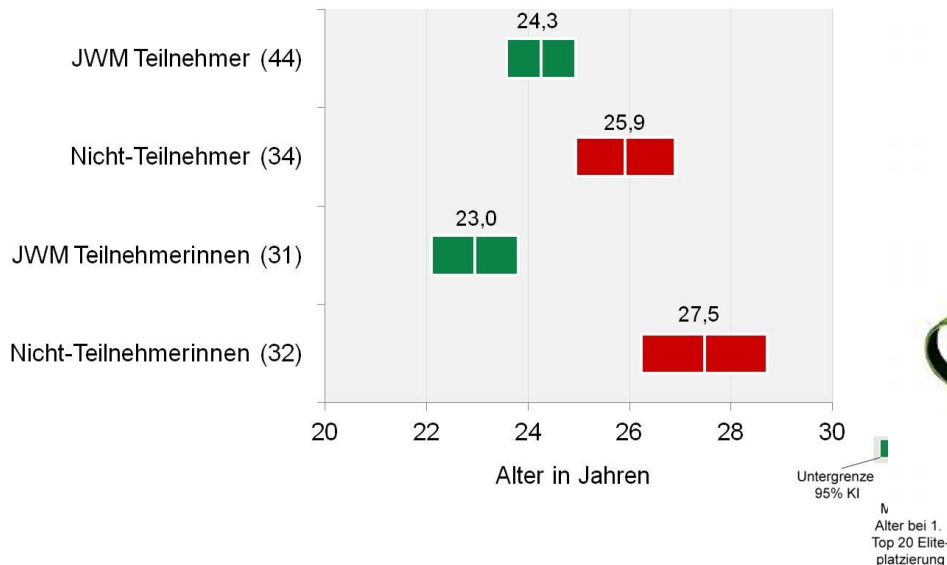
Junior success as prerequisite for elite success?

Analysis of TOP 20 WCh/OG Triathlon



- ca. 50% of TOP 20 without participation in JWCh
- no correlation of international junior and senior success
- different selection and promotion strategies of successful nations
- broad distribution of age at 1st success at elite level

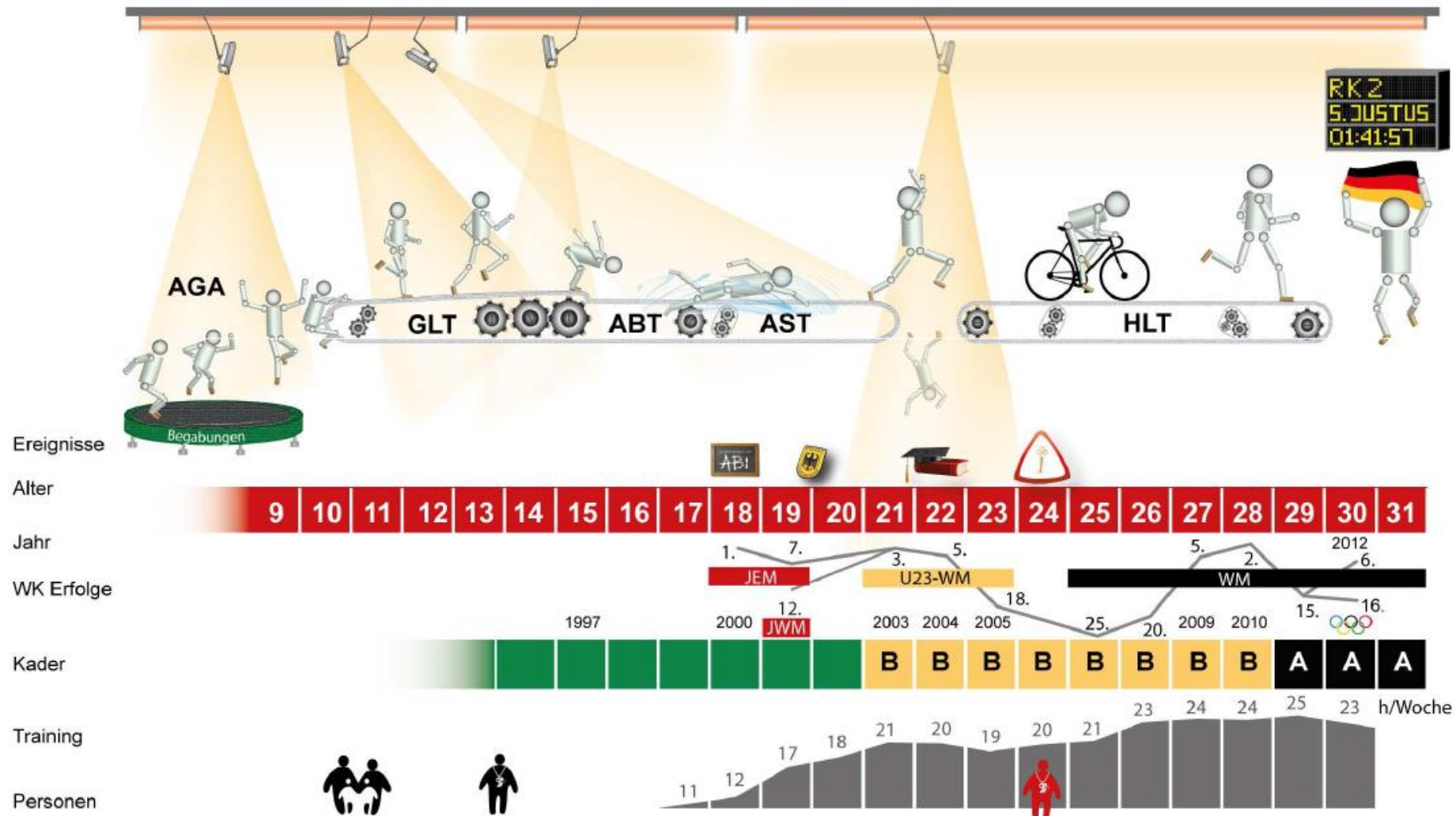
Age at 1st elite success



Matt Collins/Triathlete.com, 2013

	N	JWM
gesamt	141	53%

Documentation of individual development



TID and TDE in Germany - Requirements

Talent development

- 6 Systematic training is the most important factor for success in elite sports.
- 7 Main objective of training in LTAD is to develop performance prerequisites and load bearing capacity for elite sports.
- 8 Until maturity, training has to focus onto processes of perception and information processing.

Requirements for concepts of LTAD

- situation analysis (current status, development)
- principles and guidelines
- LTAD (stages, development, promotion system)
- talent search, talent development (complexity and dynamics)
- training and LTAD (load bearing capacity)
- performance tests (competition system)



of targets (desired profile)

and objectives;

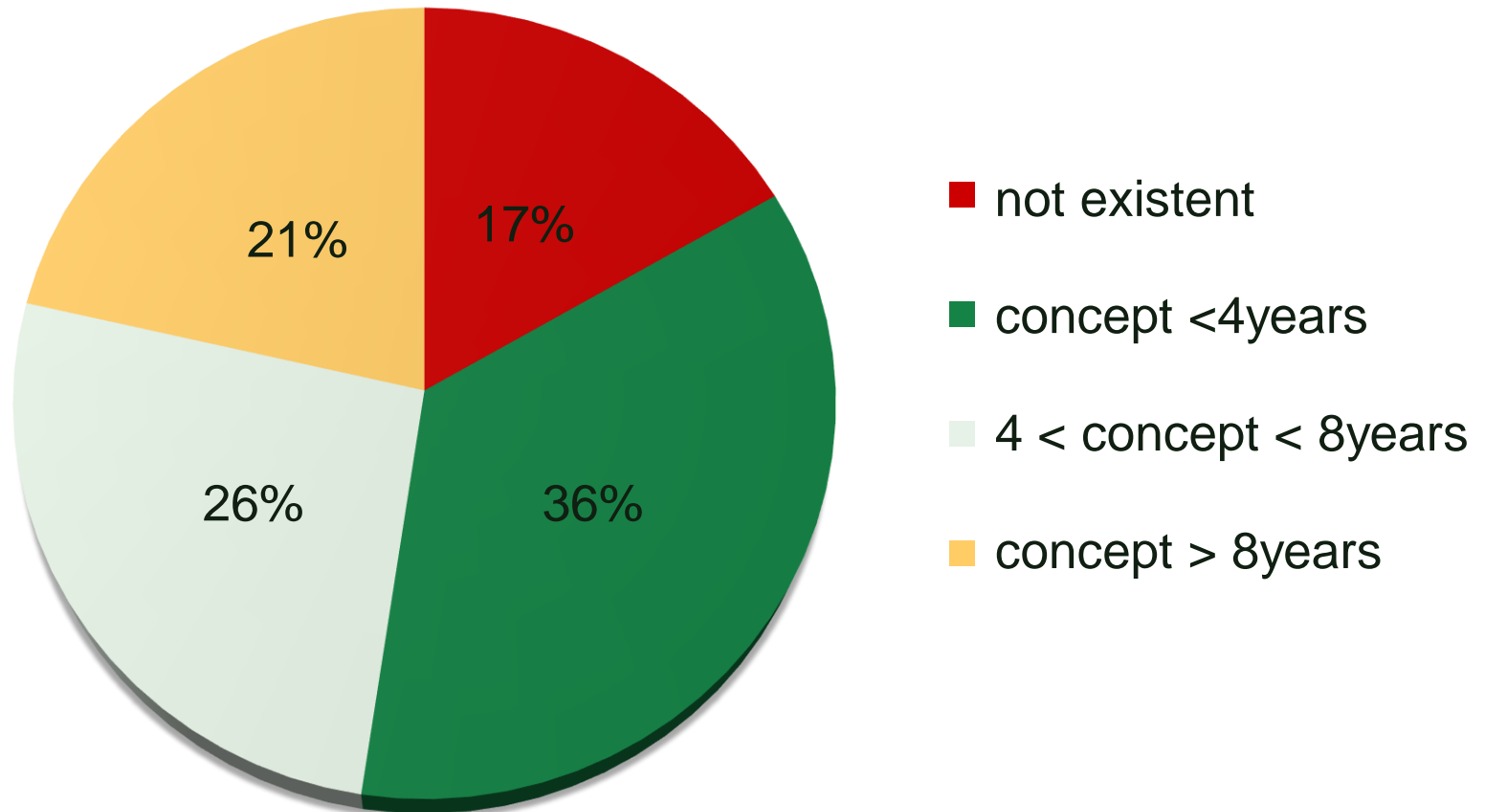
(who, when, how,

modization,



ce diagnostics,

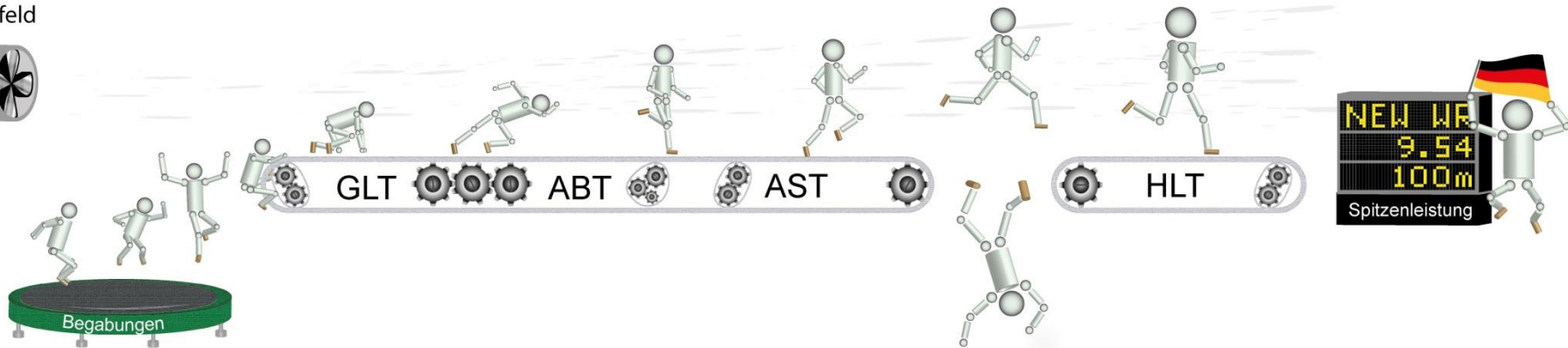
Topicality of concepts of LTAD



TID and TDE in Germany - Requirements

Environmental factors

Umfeld



TID and TDE in Germany - Requirements

Environmental factors

12

Successful talent promotion is systematic and flexible to allow individual pathways.



Best-practice: German Football Association

- 366 training centres
- 54 performance centres
- 35 elite schools of football
- 29 regional coordinators
- > 1300 professional youth coaches



TID and TDE in Germany - Requirements

Environmental factors

14

Successful LTAD requires flexible educational opportunities for promising athletes.

TID and TDE in Germany - Requirements



Elite sport schools

- 43 locations, about 11.500 students
- including boarding schools
- connected to Olympic Training Centres
- optimal promotion of athletic performance development while enabling high quality academic education

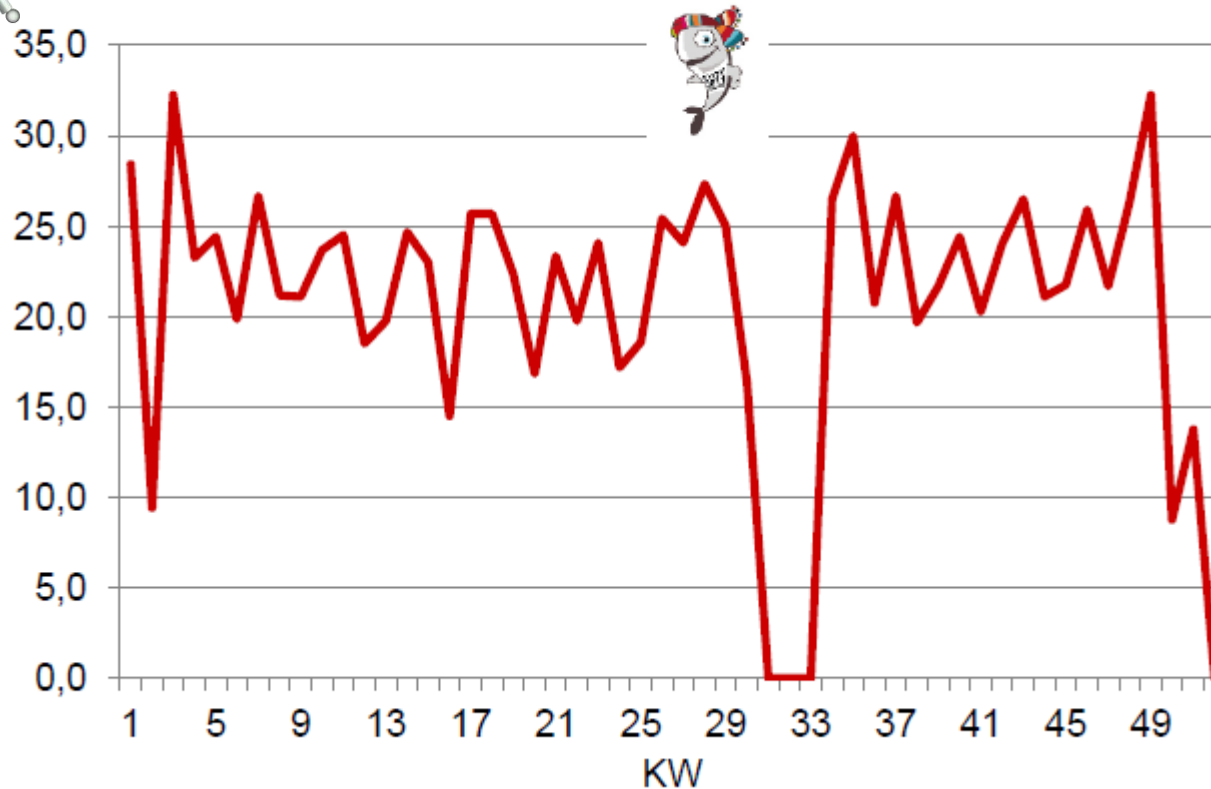
**ELITESCHULE
DES SPORTS**

(© DOSB)

TID and TDE in Germany - Requirements

Training volume of a prospect athlete in gymnastics (14 years)

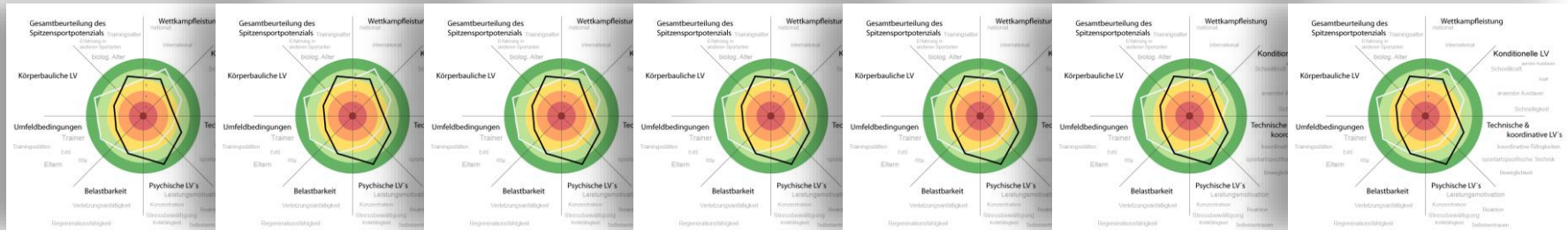
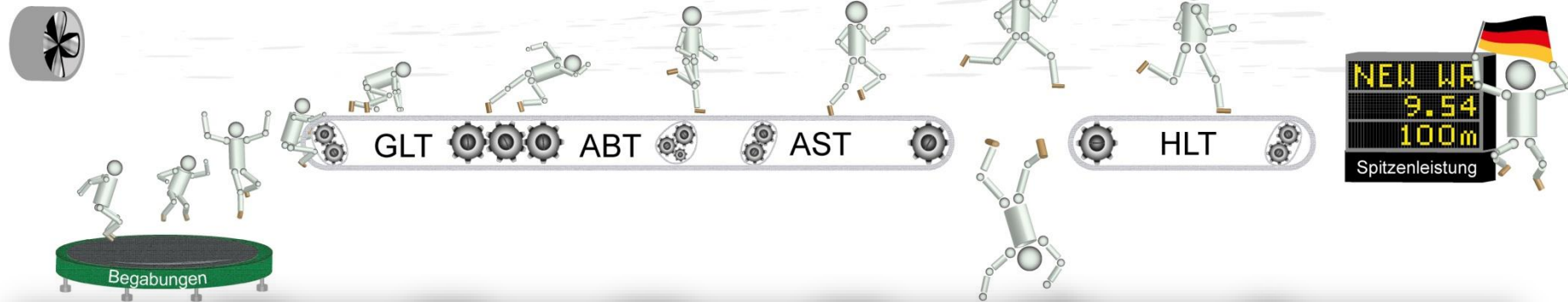
2011 - hours/week
Overall 1079h



(© Naundorf, Scheder & Frehse)

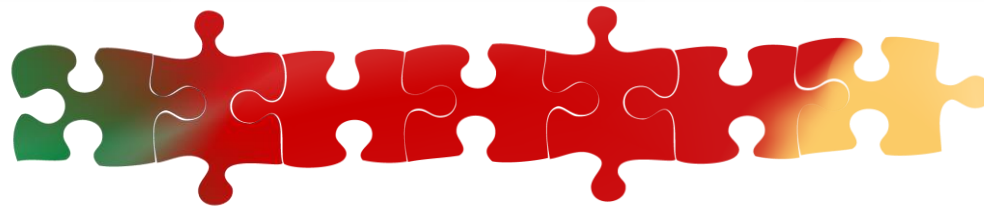
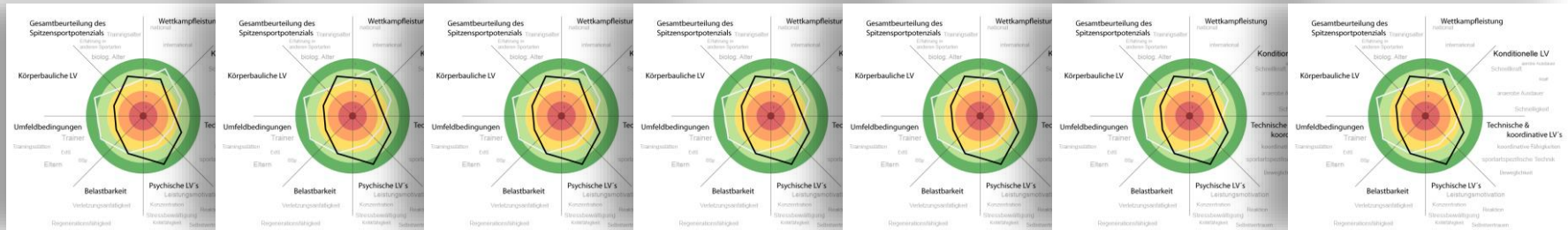
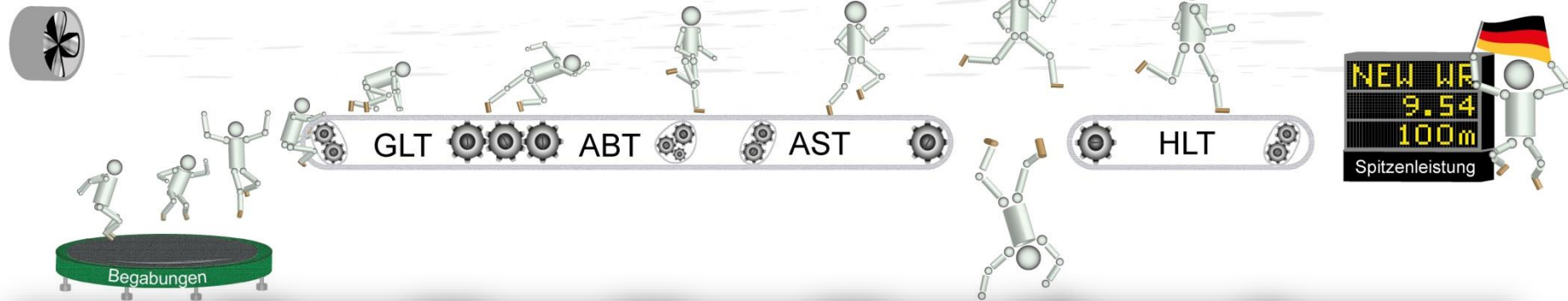
Conclusions

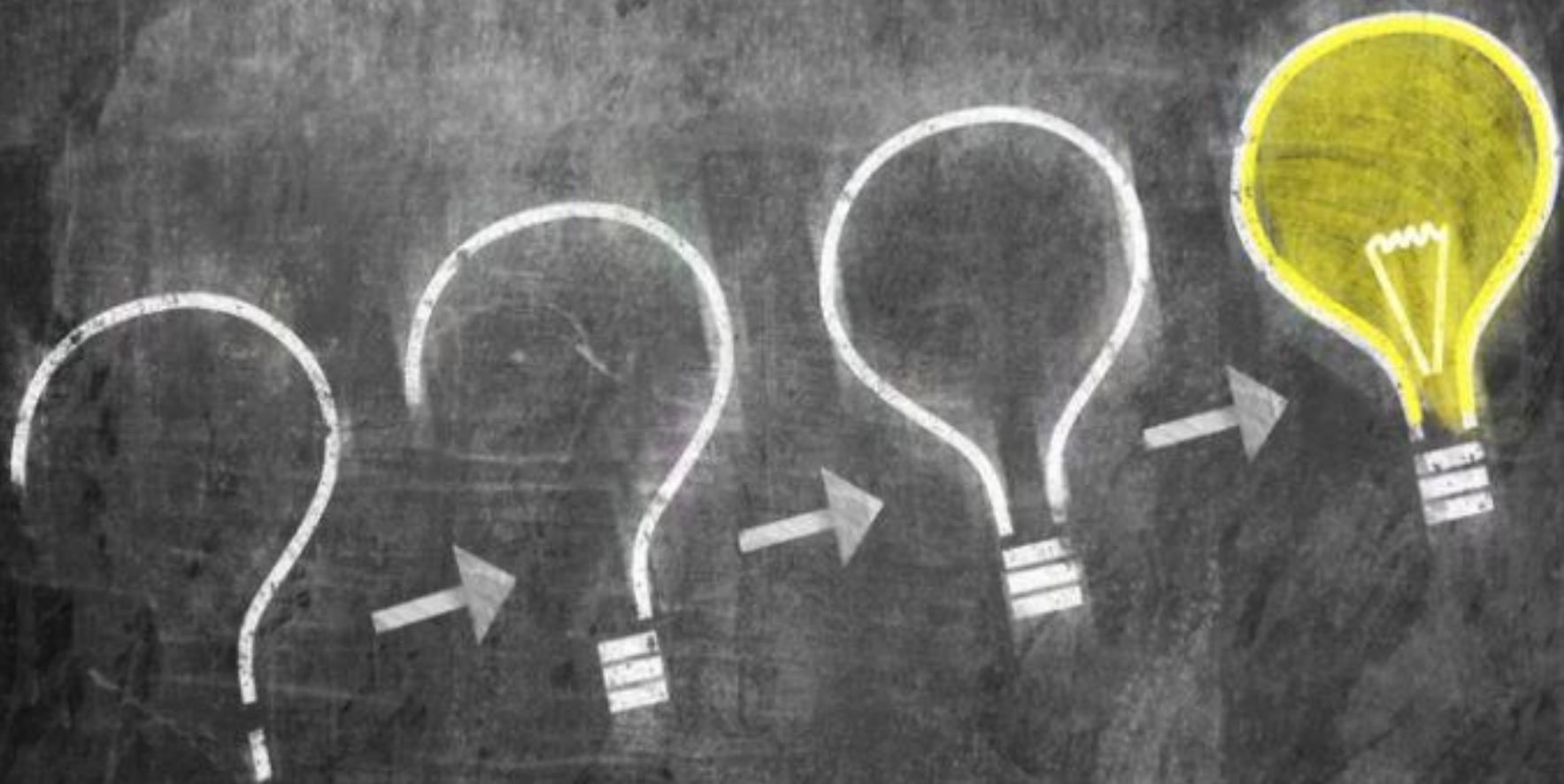
Umfeld



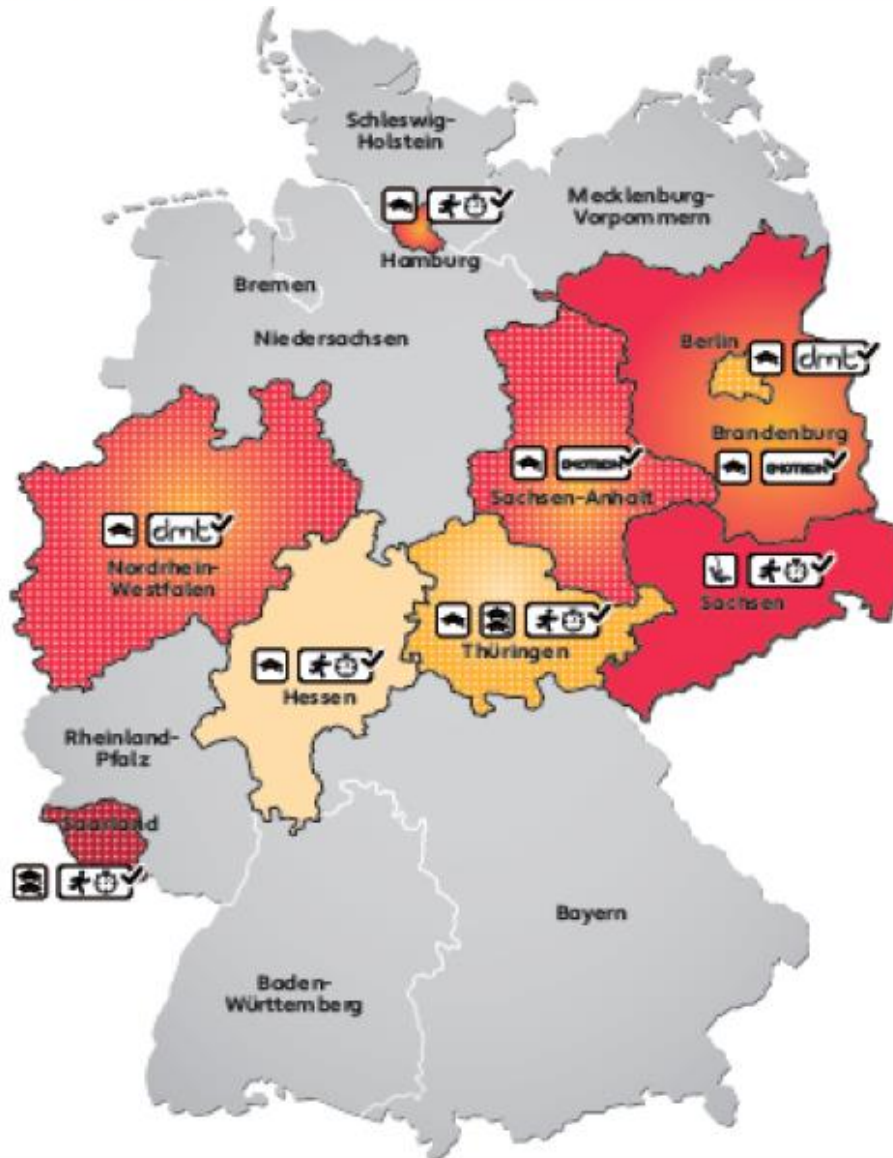
Conclusions

Umfeld





TID and TDE in Germany - Requirements



Farblegende	
	nicht vorhanden
	flächendeckend außerschulisch
	flächendeckend außerschulisch und unterrichtlich
	flächendeckend außerunterrichtlich
	standortspezifisch außerschulisch
	standortspezifisch außerschulisch und unterrichtlich
	standortspezifisch außerunterrichtlich
	standortspezifisch unterrichtlich
	standortspezifisch unterrichtlich und außerunterrichtlich
Testvariante	
	dmt (Deutscher Motorik-Test)
	Variationen des dmt
	EMOTIKON
Altersklasse	
	Kindergarten
	Grundschule (1. – 4. Klasse)
	Sekundarstufe I

(Herrmann et al., 2015)

Conclusions

TID and TDE have to be orientated towards elite peak performance.

Successful talent development is targeted, systematic and flexible for individual ways of development.

Talent is more than junior success – a complex documentation of individual development is necessary.

NSF have guideline competence – and have to exercise it. But they need support and assistance.

A specific consideration of different sports is necessary.



Interim conclusions

- understanding of need for complex and dynamic TID instead of complex performance testing raises => federations express need for support
- data bases have to be built up or to be improved (quantity and quality)
- standardized testing protocols needed => testing manuals!
- transparency in setting scores and norms (weights of each prerequisite, criteria of assessment...)
- development of routines in analysis
- regular evaluation

Conclusions

- children and adolescents are trainable pre-, circa- and post-puberty – all energy systems are trainable everytime
- possible benefits of enhanced trainability of sole aspects of performance < potential risks of overtraining and burnout
- aerobic fitness equally trainable throughout maturity
- greater gains in strength with advancing age
- attenuated trainability of speed during puberty

=> overall limited evidence base!

=> enable variety of age-appropriate trainings stimuli and methods!

=> assess and monitor individual development!



Content-related and methodological differentiation in youth training

until ABT: developing prerequisites task-oriented (for future success)



Special programs for resistance and strength

Promoting personal development



Adjustment of competition formats

Straining systems of perception and processing information in time

Years of training	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Training stage	GLT			ABT			AST				HLT					
Squad level				D			D/C		C		A/B					

Development of load bearing capacity by versatile athletic programs



Developing speed and quickness regarding the performance profile

Content-related and methodological differentiation in youth training

Beginning with AST: Complex development of performance



Significant increase
in load requirements

Enhancing number
and quality of
competitions

Transition to elite
training



Years of training

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Training stage

GLT

ABT

AST

HLT

Squad level

D

D/C

C

A/B

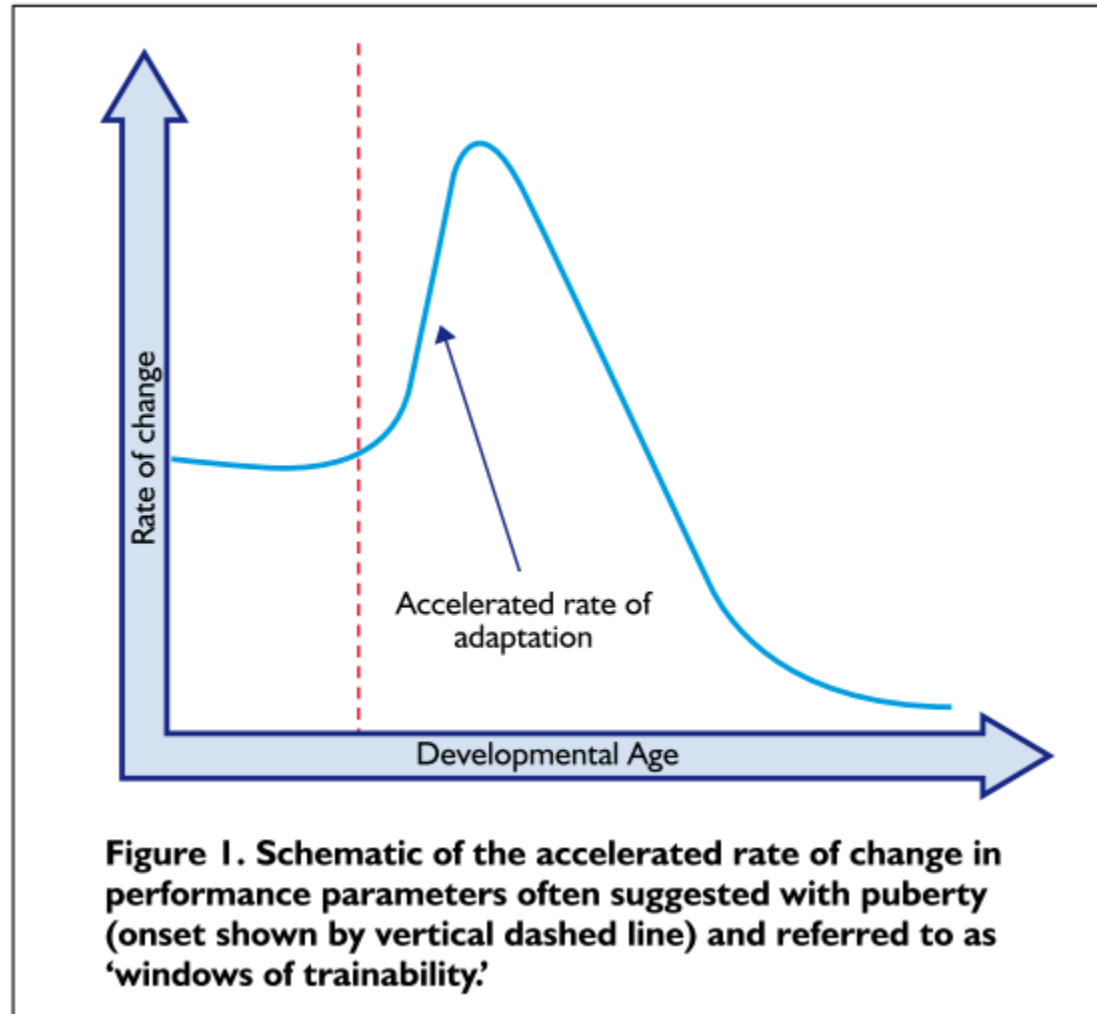


Catch-up to
international elite
performance level



Greater demands on
energetic processes

Windows of opportunity?



(📖 Mc Narry, Barker, Lloyd, Buchheit, Williams & Oliver, 2014)

Systematic but flexible talent promotion

Useful addition to deliberate practice/LTAD?

Christoph Grotheer (GER)

- school as ski jumper
- age of 15



2015; 5th in WCh 2015

Yes!

Helen

- hockey, swimming
- x-country runner at international level
- 2008 first contact with rowing at age 14



International top level
age of 14

2013; Overall World Cup Winner 2014; World

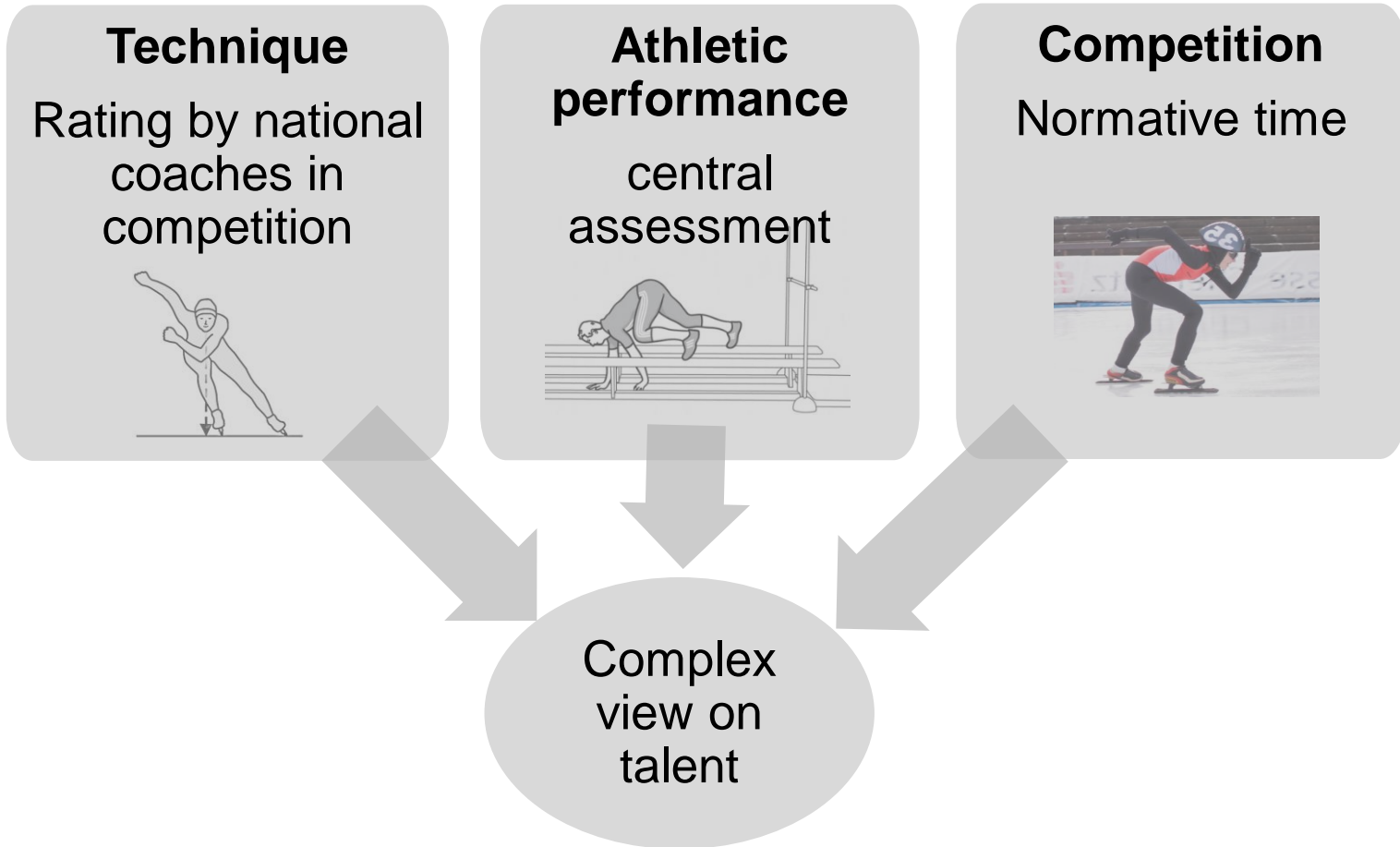


German model of long-term athlete development



(DHB, 2015)

Overall assessment as base for squad selection 2016/17

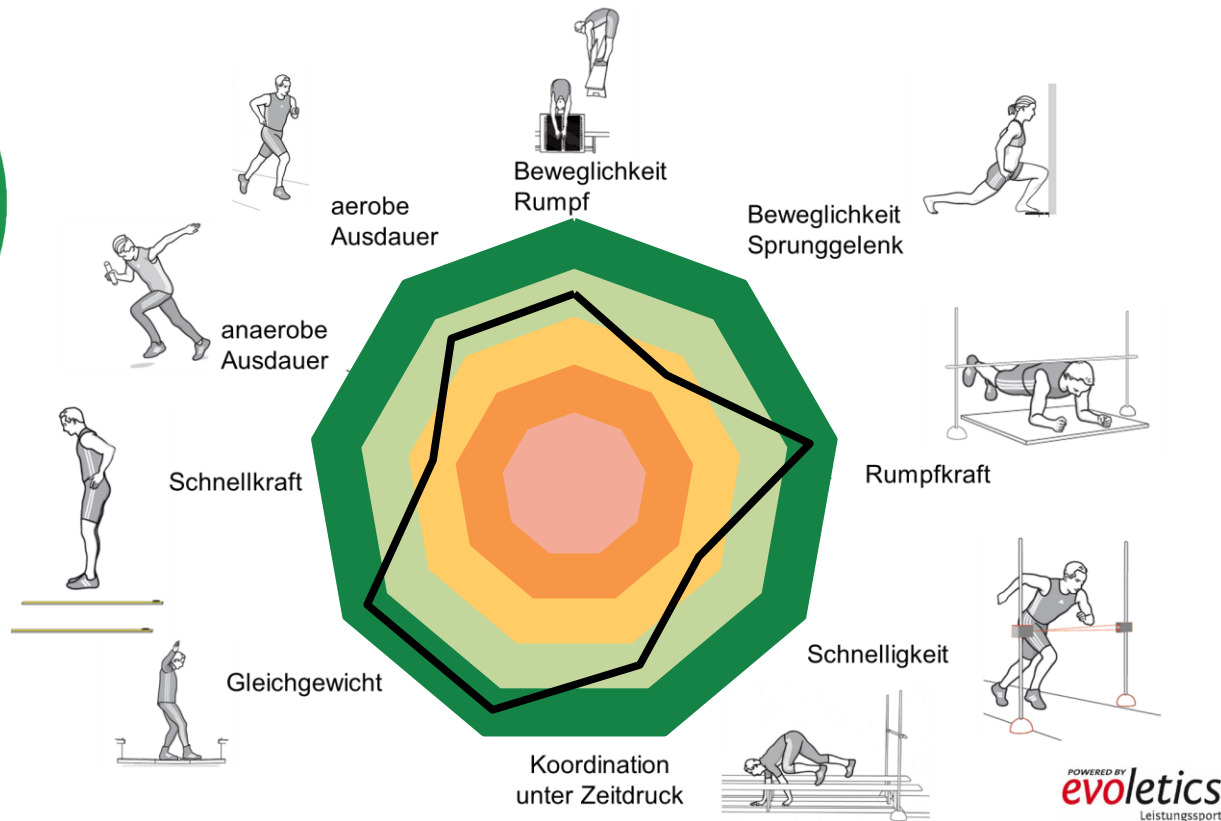
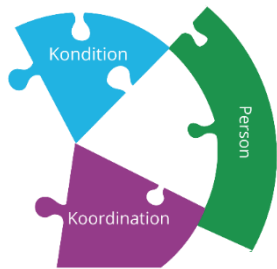


Fudel, 2017; Wulff et al., 2017

Modification of central athletic assessment

DELTA

Deutschland entwickelt Talente



TID and TDE in Germany - Requirements

Environmental factors

- 13 Talent need systematic promotion as well as challenges for successful development of performance and personality.

Promote and challenge talents

- promotion of personality development
- development of psychological characteristics (self-efficacy, self-management, coping with pressure,...)
- systematic organisation of challenges
- fostering quality of training and experience in competitions (centralisation, training camps, international exchanges)



Organisation of Sports in Germany

Public administration

Administration of Sports

