Process of Long Term Athletes Development

From Grass root (Event Group) to Youth Level

Cali (COL), July 20th 2015

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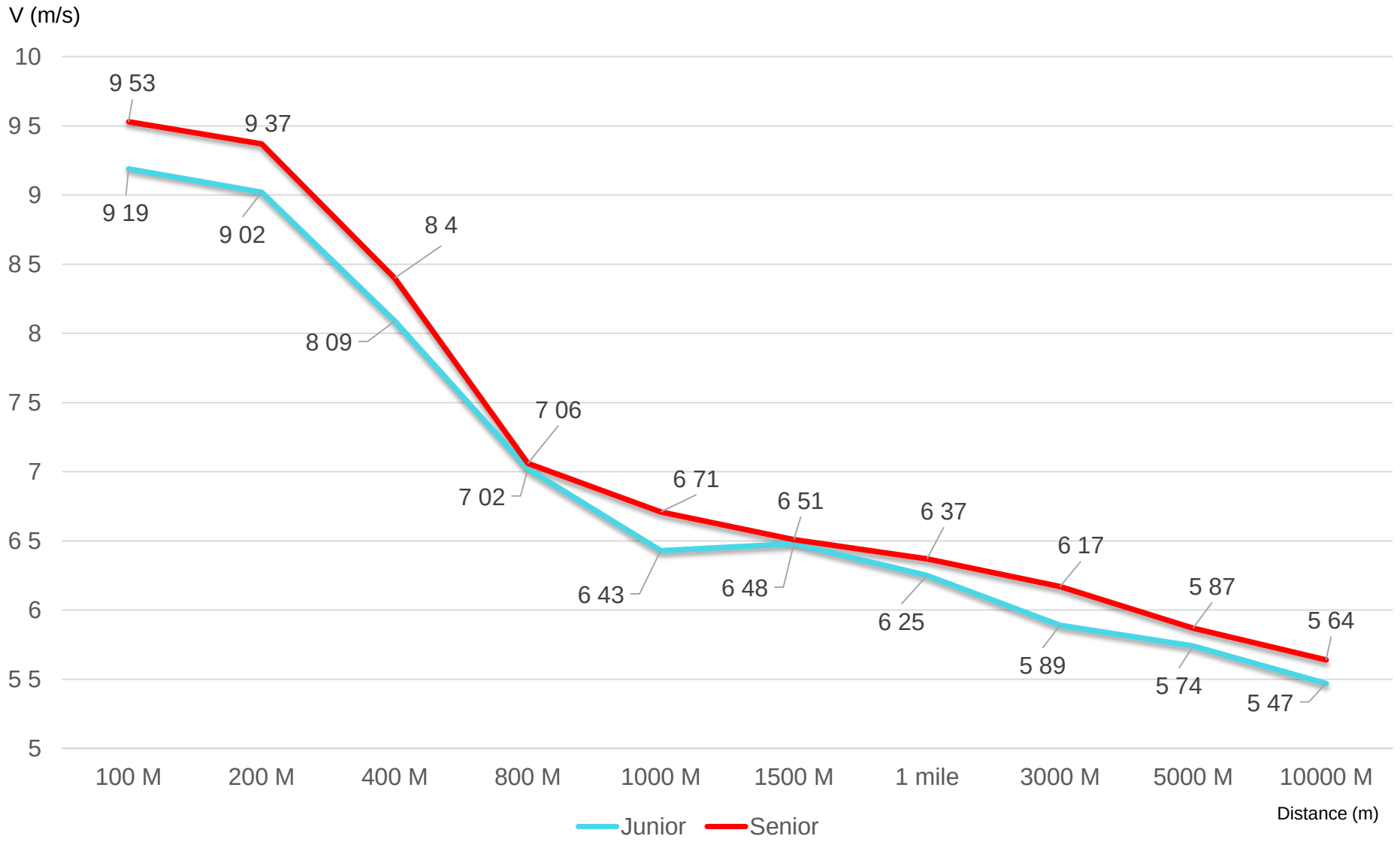
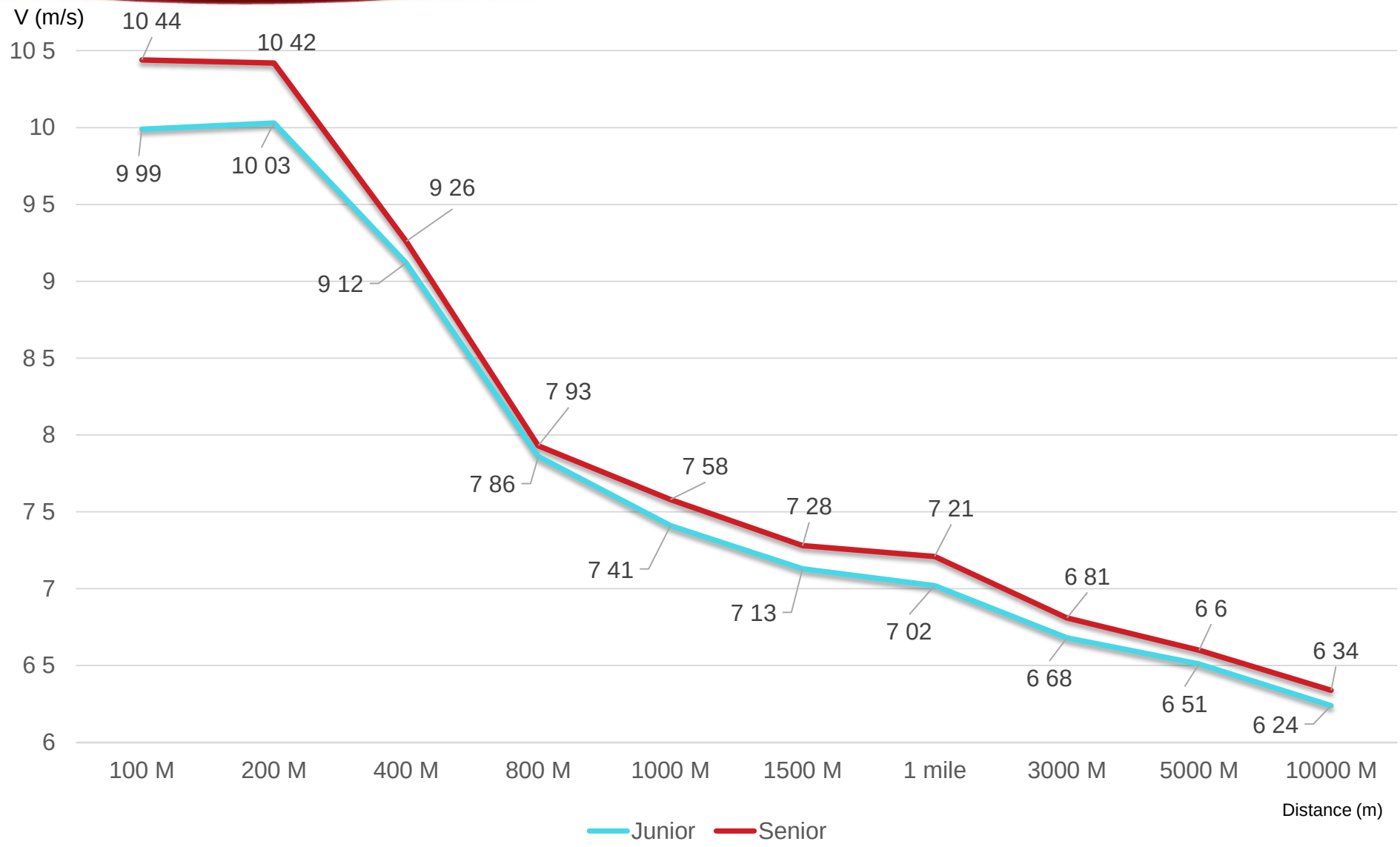
The performance standard achieved in Athletics is exceptionally high.

ORMANCE JUNIOR/SENIOR – WOMEN



FORMANCE JUNIOR/SENIOR – MEN



Structural Model of Talent Promotion

- To assure a promising preparation for top performances, a closed event specific system of talent is necessary.
- The basis of that system is a long term, systematic and target-oriented training process.
- Talent reveals itself only in practical activity.

The structure of the talent development is extremely complex

Talent is a genetically determined potential, instable and strongly dependent on a permanently changing environment.

Talent development without training is simply not possible

The Athlete…First!!

It is the growth & development of the kids / teenagers which dictates the training programmes.

Definitively, not the opposite!

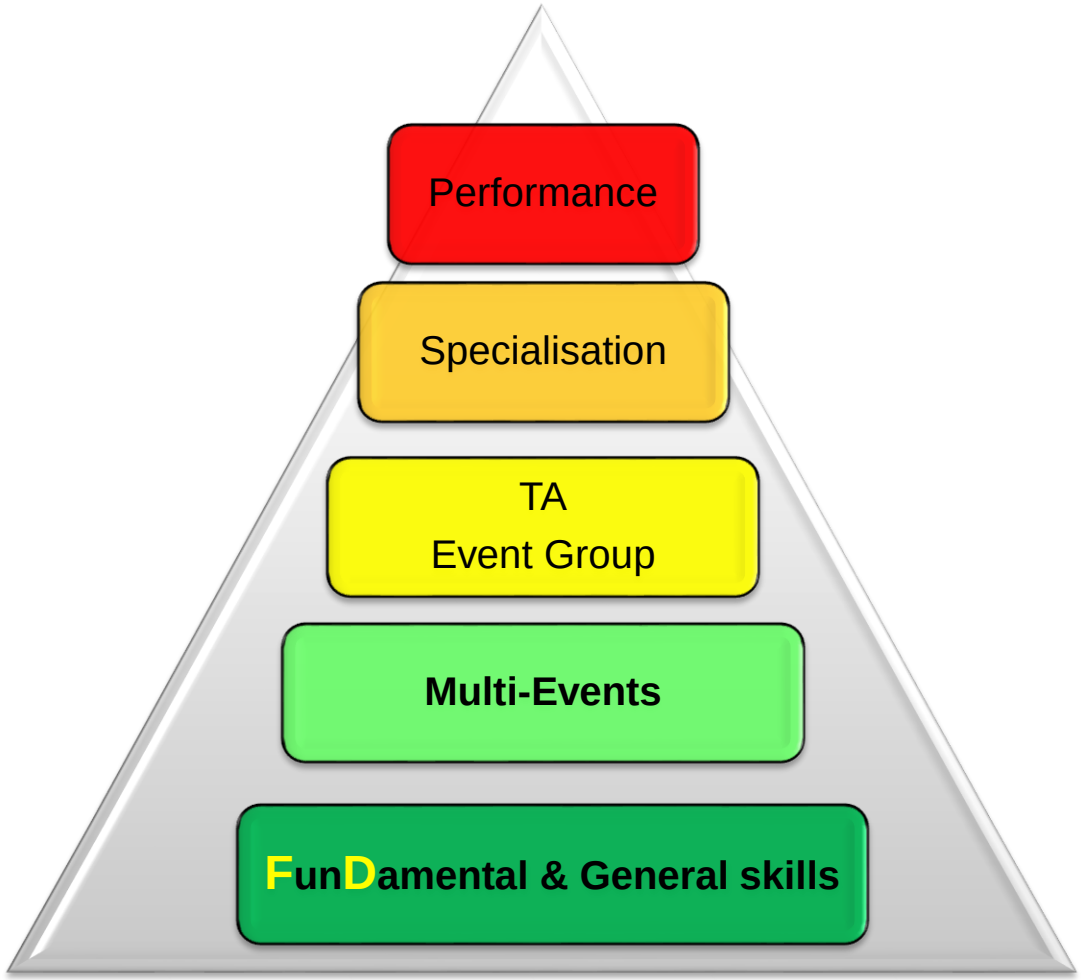
The Athlete…First!!

Young sport participants,
including talented athletes,
are children and adolescents
with the needs of children and
adolescents.
Their goal is to “grow up”,
biologically grow and mature and
behaviourally develop.

R. Malina (2010)

IAAF LTAD

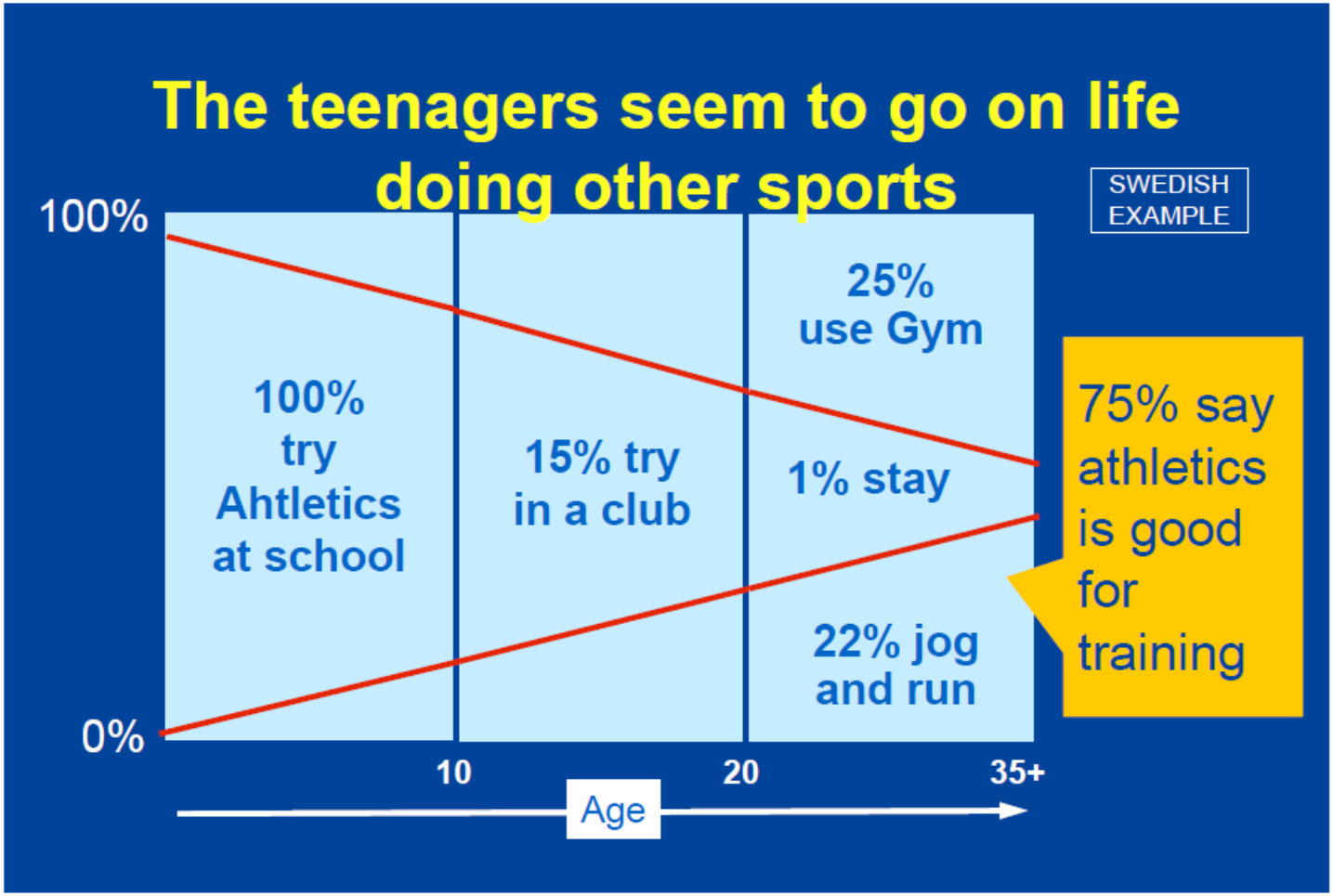
IAAF Long Term Development Model Athlete



LONG TERM PROCESS
Development of long time performance (28 sport events / IAT-Leipzig, 1991)

Age - Duration	Sexe	Technique & Acr. sports		Endurance sports		Force - velocity	
Average starting age	M F	6.5 6.2	(0.5) (0.3)	9.4 9.3	(1.3) (1.4)	9.3 9.3	(1.3) (1.5)
Max. Indiv. Performance	M F	14.5 12.8	(2.0) (2.2)	14.6 13.0	(2.3) (2.5)	15.8 13.8	(1.8) (3.0)

Importance of the Competition



SWEDISH ATHLETICS

Profile of Talented athletes

- ✓ **Train more successfully**
- ✓ **Learn faster**
- ✓ **Use experience and knowledge for performance enhancement**
- ✓ **Show better use of training stimuli**
- ✓ **Perform better than other athletes whose training under the identical programme (content, volume..etc).**

Early vs Late

“It should be out of the question to select only a few athletes in the course of early talent selection because there is a considerable risk to reject most of the children who have the potential to become particularly successful”

Wendland, 1984

Talent Development in Athletics

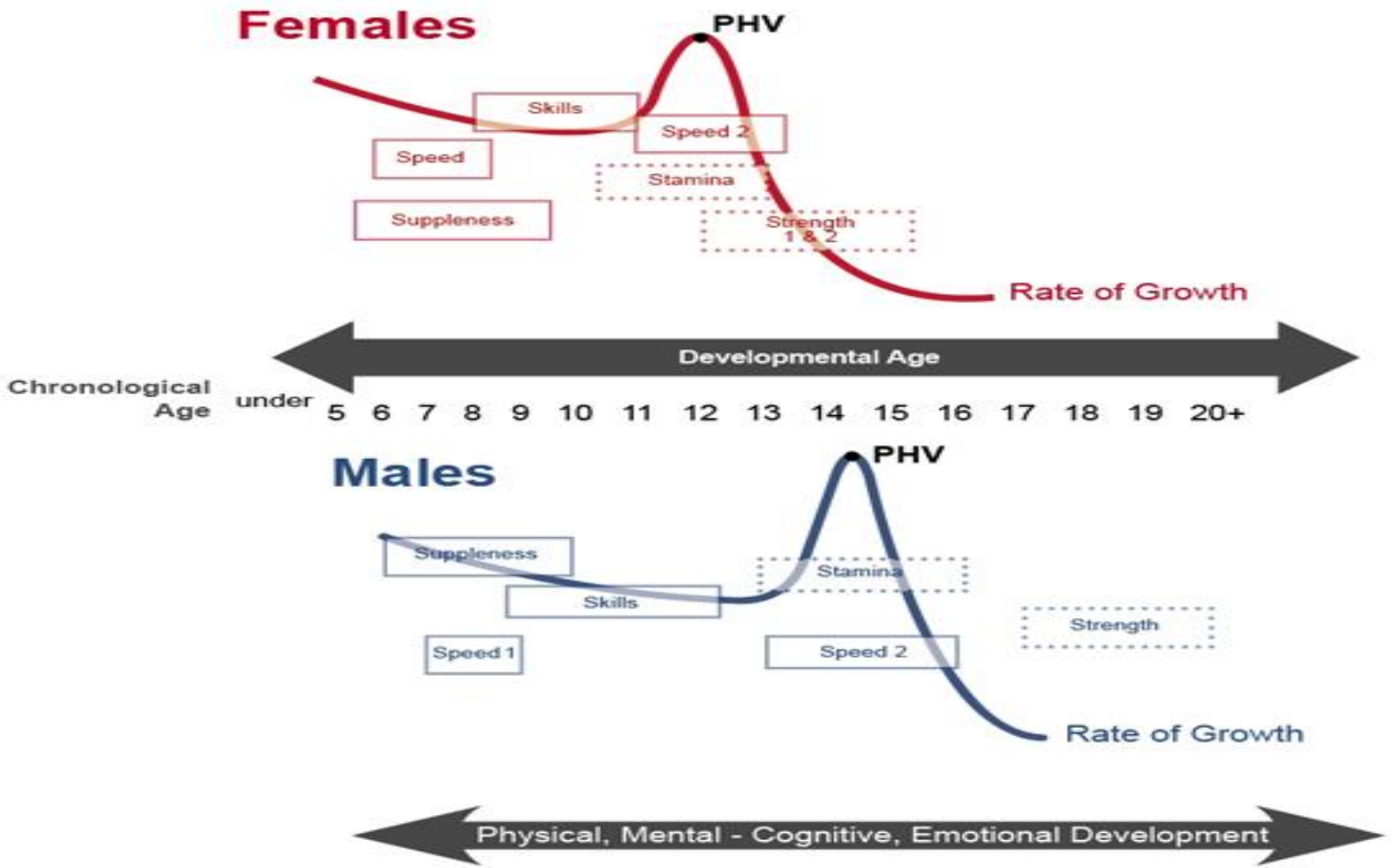
- **Starting about 7-8 y old up to 12 y can be considered as favourable period for general FunDamental skills training.**

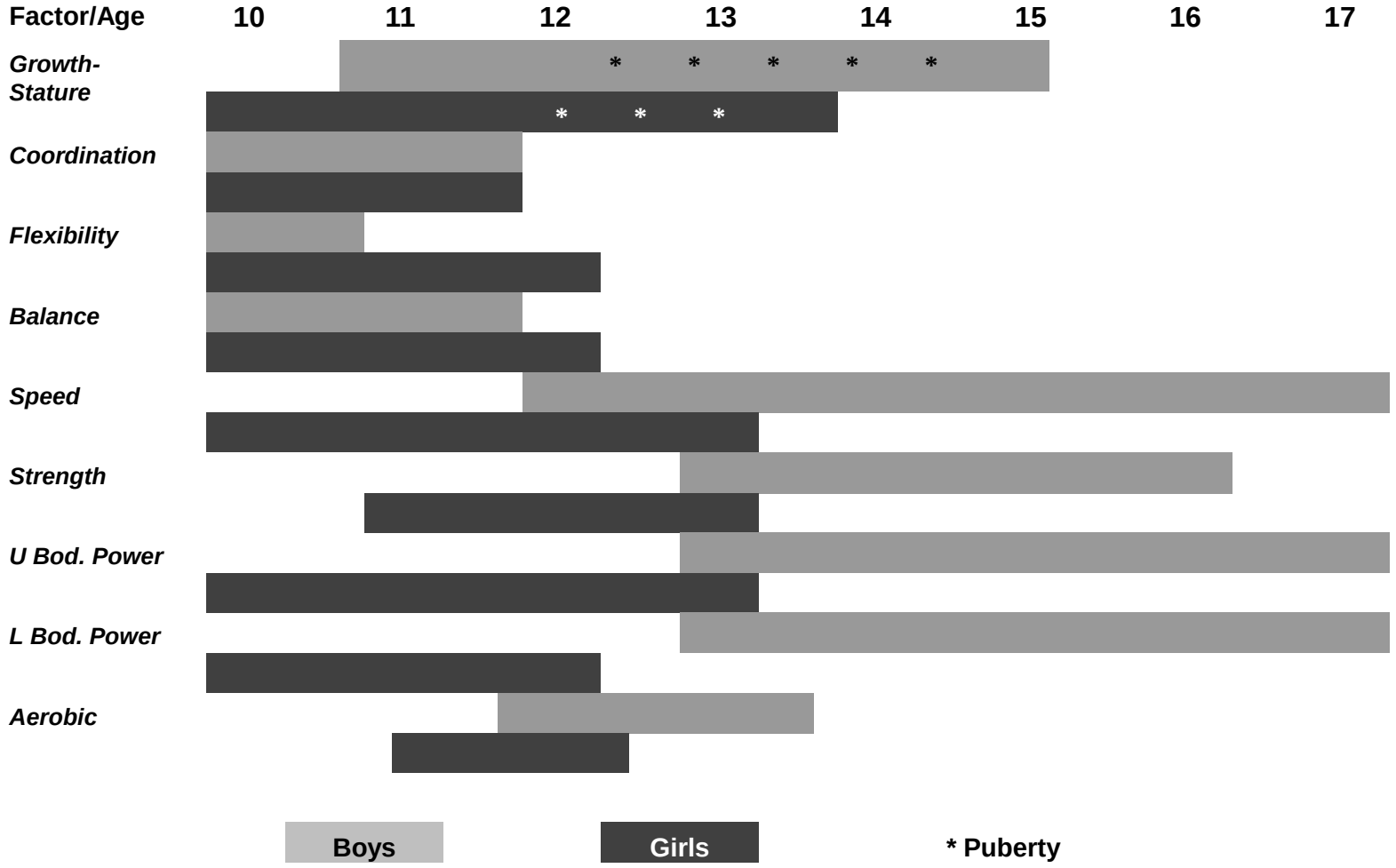
- **The training frequency:**

  in order to benefit roughly, at least, from the influence of training:

  - **2 times / week in age group 10**
  - **2 to 3 times / week in age groups 11- 12**
  - **3 to 4 times/ week in age groups 13-14**

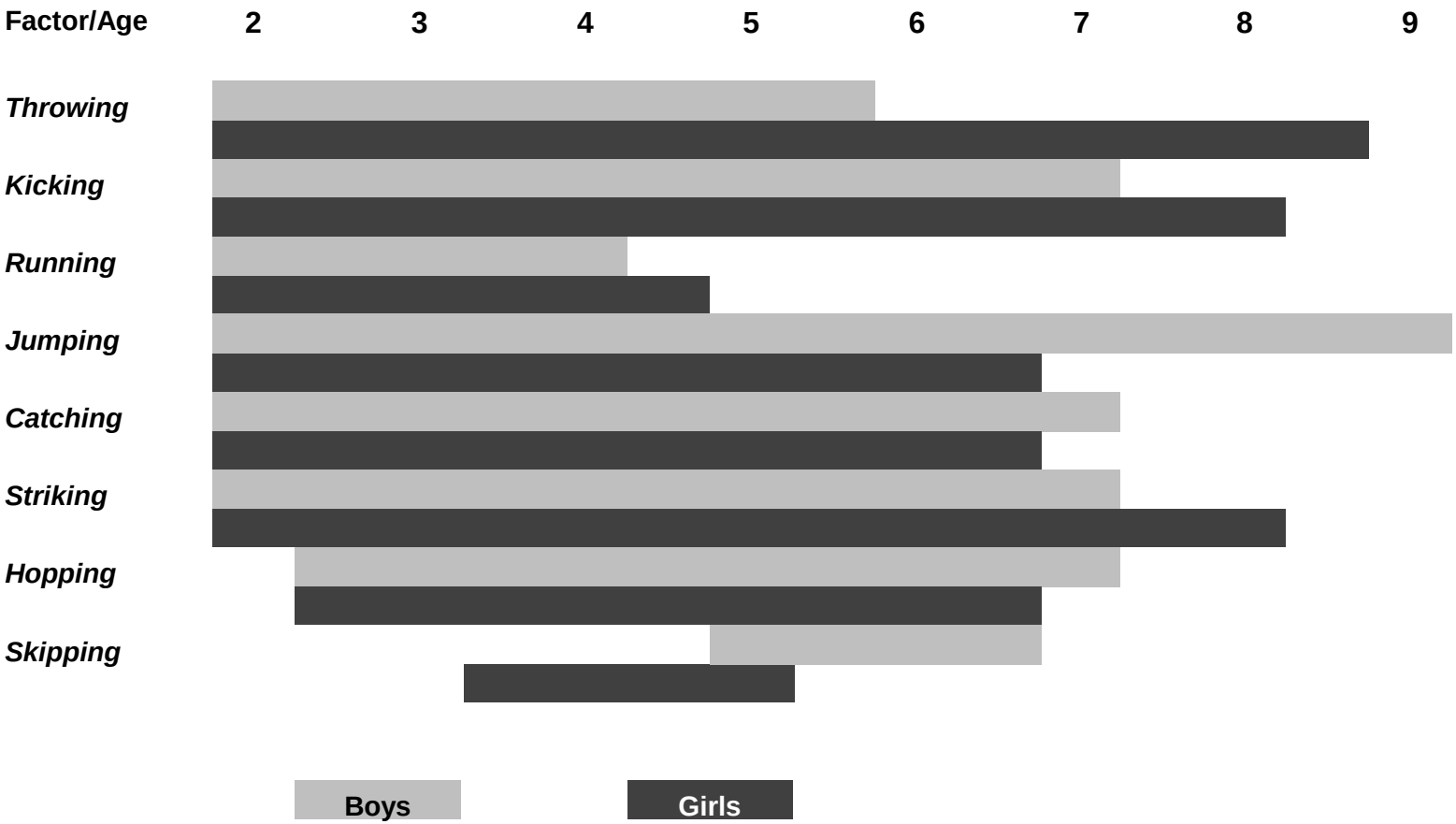
Windows of opportunities





Periods of rapid natural improvement in various components of physical and motor fitness

Windows of opportunities



Periods of improvement in various fundamental movements

It is vital that coaches are aware of the so-called critical periods of “accelerated adaptation” so that these windows of opportunity are exploited to their full potential

Long Term Athlete Development

1st Principle

Competitive athletics training is always oriented towards

I m p r o v e m e n t

- ✓ **Basic abilities**
- ✓ **Basic skills**
- ✓ **Transformation into special abilities and skills**
- ✓ **Pre-requisite for athletic form**

Coach and athlete can only assess the adaptation behaviour of the athlete accurately, when all relevant training data (load and performance data) are documented in a reproducible form and stored in a data base.

Long Term Athlete Development

2nd Principle

Competitive athletics training is always oriented towards

Successful Performance in Competition

- ✓ **Performance structure of event**
  - **e.g. Performance limiting factors**

determines the training structure

Long Term Athlete Development

3rd Principle

Competitive athletics training is always oriented towards a

P r o g r e s s i v e L o a d

- ✓ **Training process**
  - **Loading**
  - **Recovery**
- ✓ **Load should constantly increase**
- ✓ **Allow sufficient recovery**
- ✓ **Loading forces adaptation**
- ✓ **Loading stimulates the recovery process**

Long Term Athlete Development

4th Principle

Competitive athletics training is always an

I n d i v i d u a l P r o c e s s

- ✓ **Individual even in group training**
- ✓ **Individual stimulus processing by the individual results in adaptation to training stimuli**
- ✓ **Athlete is subject of training process**
- ✓ **Athlete not object of outside control**

Long Term Athlete Development

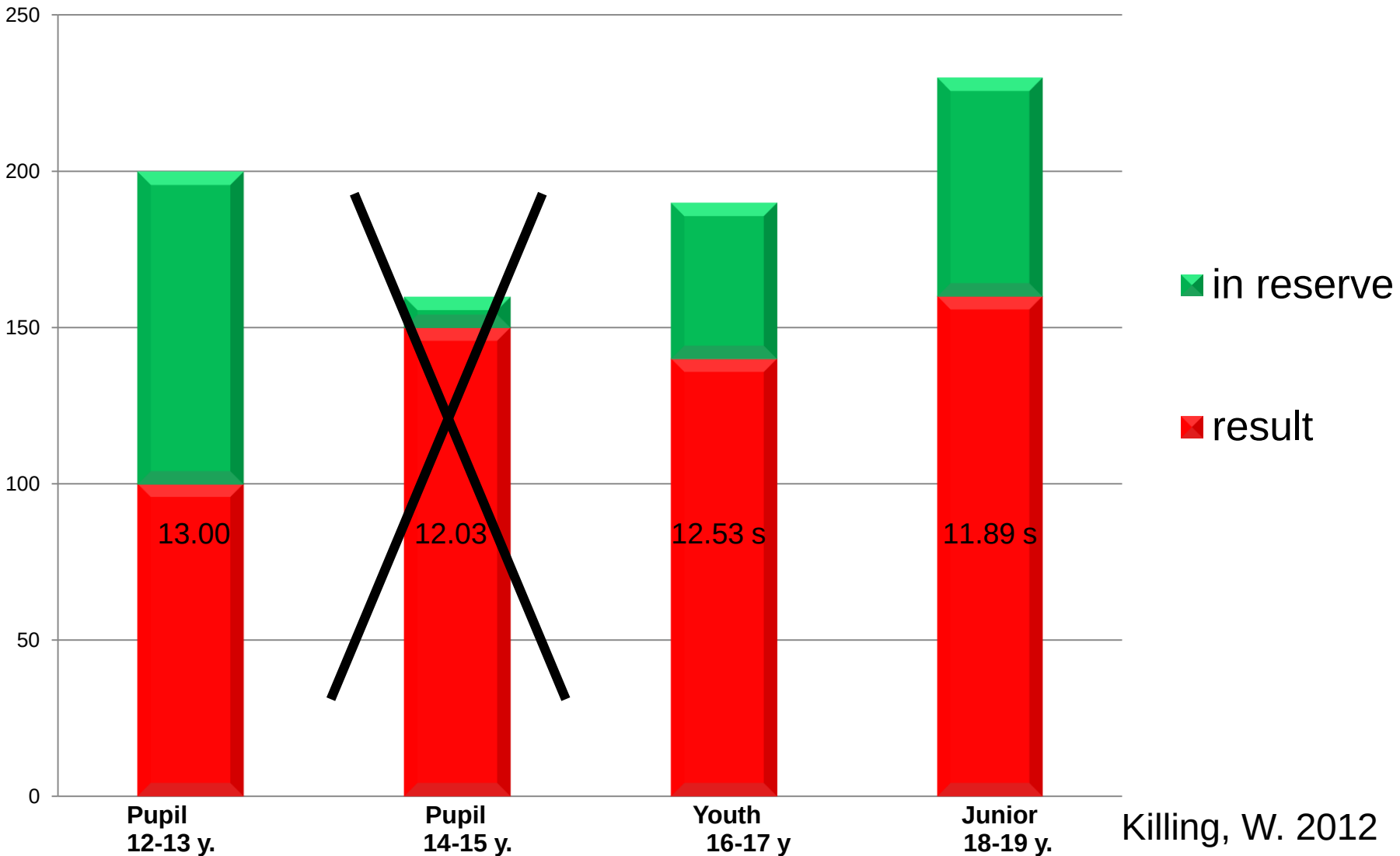
5th Principle

Competitive athletics training is always a

Long term process lasting several years

- ✓ **8 – 10 years for Novice to reach highest perf level**
- ✓ **Novice athlete training has a prognostic aspect**
- ✓ **Young athletes have great adaptation reserves**
- ✓ **Especially all Speed parameters to be developed at a young age**

Warning: No specific & intensive training... otherwise you loose all reserves



Killing, W. 2012

Long Term Athlete Development

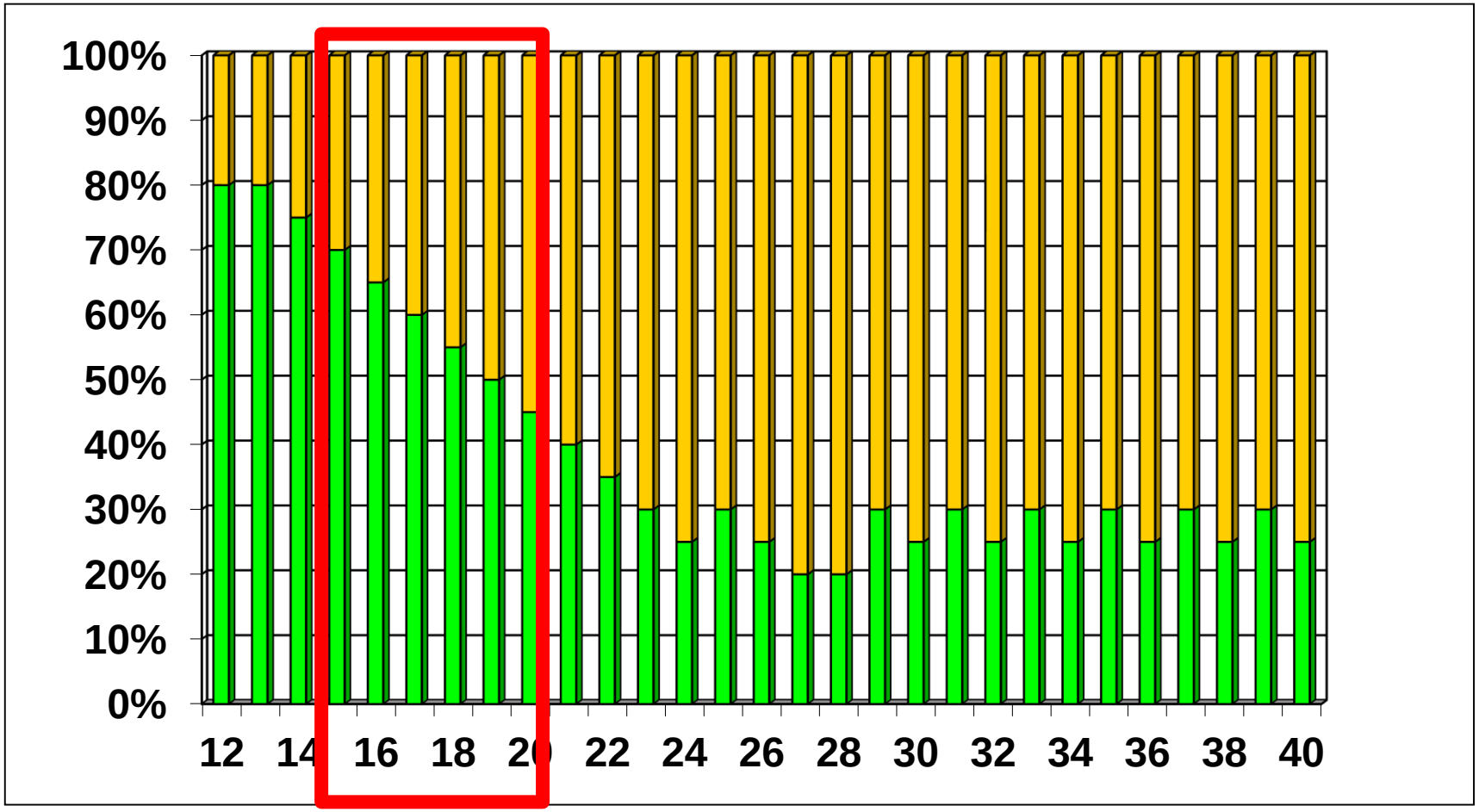
6th Principle

Competitive athletics training is always characterised by

I n c r e a s i n g S p e c i a l i s a t i o n

- ✓ **Begin with non-specific training methods**
- ✓ **Methods increasingly more specific as competition period approaches**
- ✓ **Increasing specialisation in LTAD**

Specific vs General Training



Killing, W. 2012

Long Term Athlete Development

7th Principle

Competitive athletics training is always a result of

T e a m W o r k

- ✓ **Leadership of the coach**
- ✓ **Highest quality of training enabled by team**
  - **Athlete**
  - **Doctor**
  - **Physiotherapist**
  - **Scientist**
- ✓ **Training Management is an essential part of training**

Long Term Athlete Development

8th Principle

Competitive athletics training must always be

Documented in a Reproducible Form

- ✓ **All relevant training data documented**
  - **Loading**
  - **Performance**
- ✓ **Reproducible Form**
- ✓ **Stored in Data Base**
- ✓ **Precondition for accurate assessment by athlete and coach**
- ✓ **Assessment of the dynamic of the adaptation behaviour of the athlete**

Many-sided & general training

- Many-side, general skills training
- Broad performance basis
- Sufficient load tolerance for the increasing special demands in block-specific building training.

Other Sports

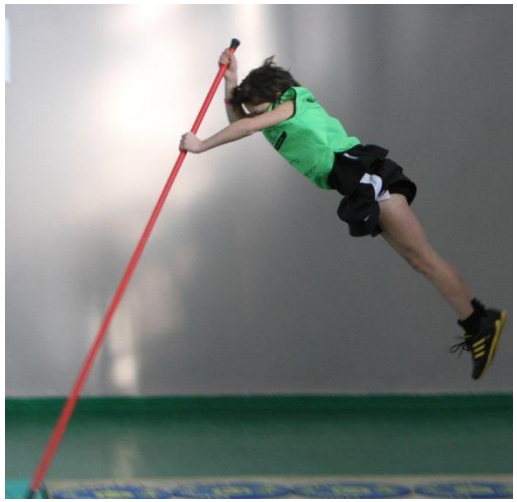
Many-sided general training clearly dominates over special and aims at both **coordinative-technical and physical conditioning** using training exercises taken from the whole of athletics and other sports.

Coordinative-technical training

Coordinative prerequisites for technique acquisition training as well as stable basic forms of technique must be acquired before doing a forced conditioning training (it must conceded here that certain techniques training require a basic potential of physical abilities)

Multi-events

Useful basic forms of technique should be acquired in several athletics events in order to find decision aids for the transition to block specific build-up training.



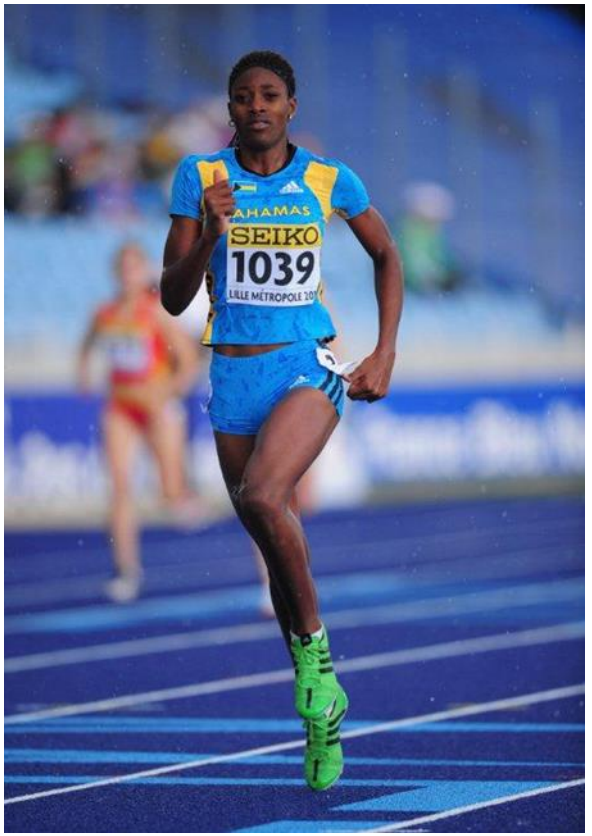
Speed oriented training

- The period up to the end of biological maturation is particularly favourable for the training of speed.
- Speed is to a great extent determined by the quality of neuromuscular control and regulation process.
- The early practice of fast movement actions supports motor learning.

Speeeeeeeeed…

- The training speed prerequisites is not only of importance for speed determined events but also for
- **endurance**
- **strength**
- **technique**

determined events.



Sacred ‘3’

A high level of

- **basic athletics skills**
- **coordinative technical perfection**
- **high speed**

are essential talent criteria

of future top performances.

Sacred ‘3’

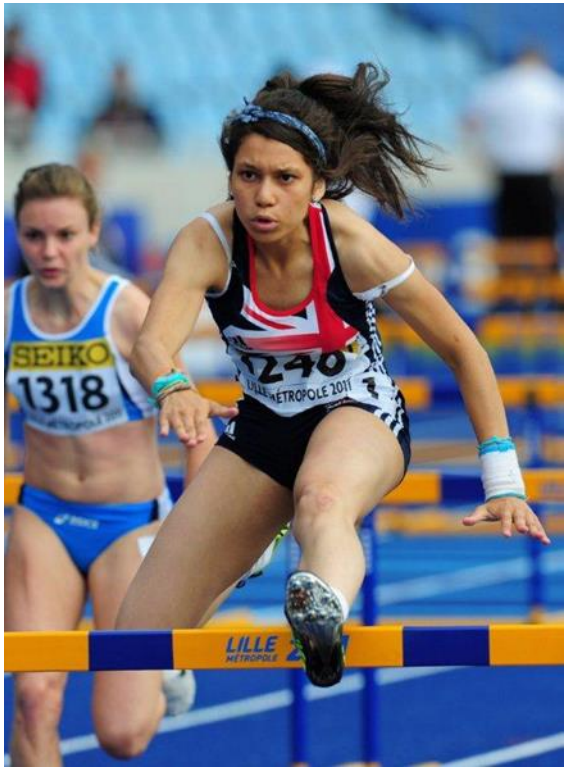
Trainability of these 3 performances prerequisites

- **basic athletics skills**
- **coordinative technical perfection**
- **high speed**

is an important emphasis of

talent development

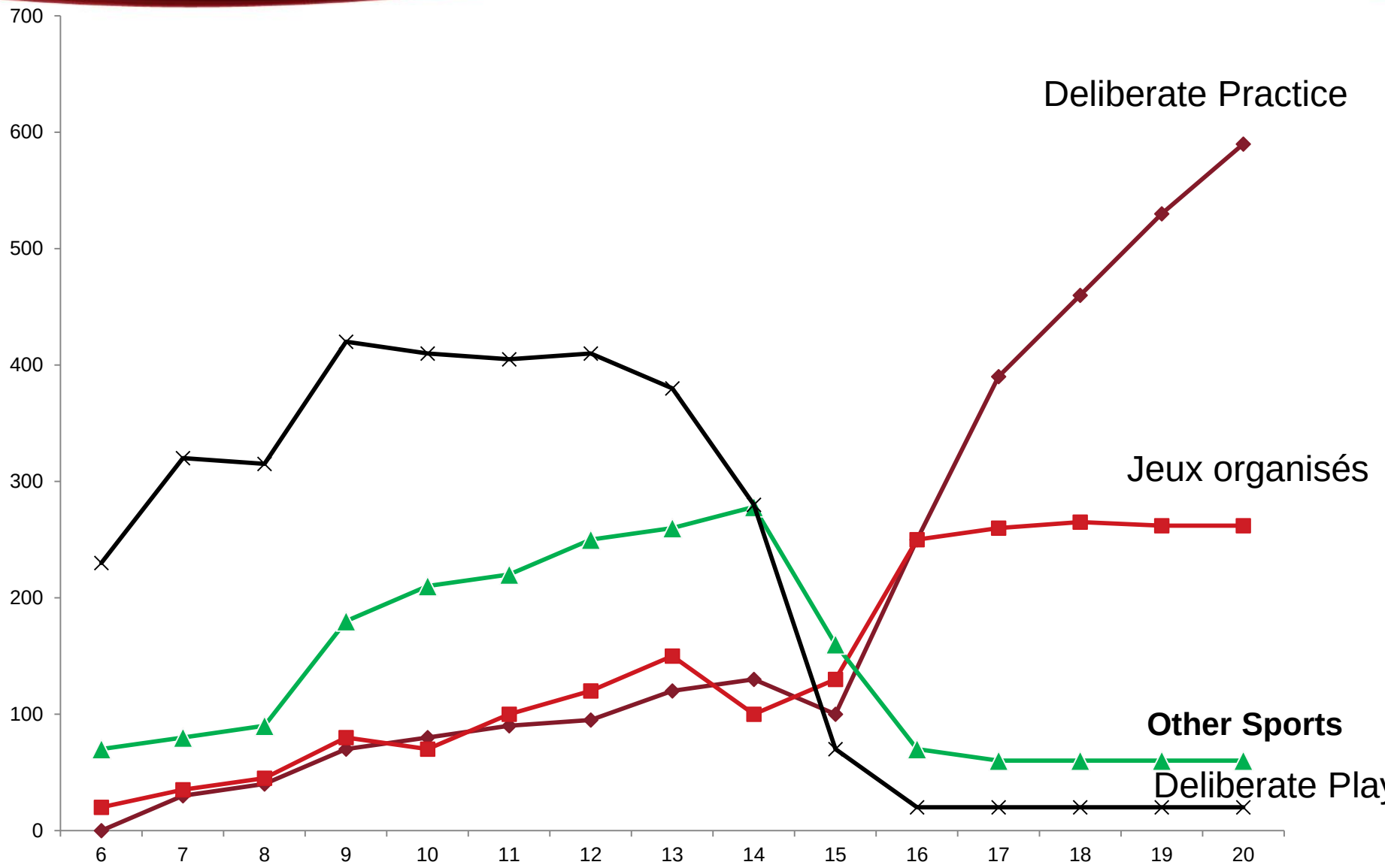
<u>in basic training.</u>



Play vs Practice
Ericsson & al.

Dimensions	Free play	Deliberate play	Structured practice	Deliberate practice
Goal	Fun	Fun	Improve performance	Improve performance
Perspective	Process (means)	Precess-experimentation	Outcome (ends)	Outcome (ends)
Monitored	Not monitored	Loosely monitored	Monitored	Carefully monitored
Correction	No correction	No focus on immediate correction	Focus on correction (often through discovery learning)	Focus on immediate correction
Gratification	Immediate	Immediate	Immediate and delayed	Delayed
Sources of enjoyment	Inherent	Predominantly inherent	Predominantly extrinsic	Extrinsic

Play Vs Practice
Ericsson & al.



Athletics Vs other sports
Ericsson & al. (2010)

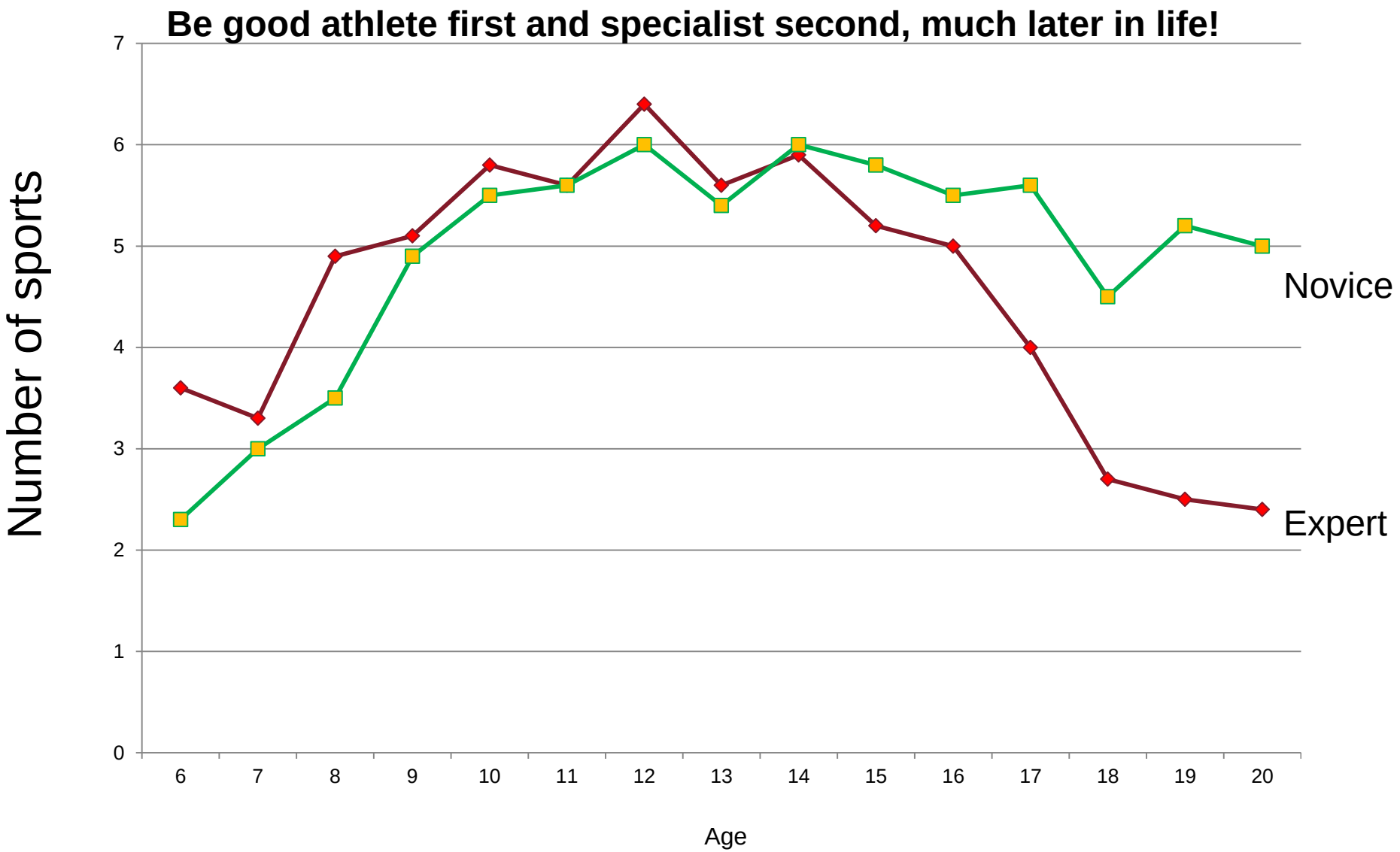
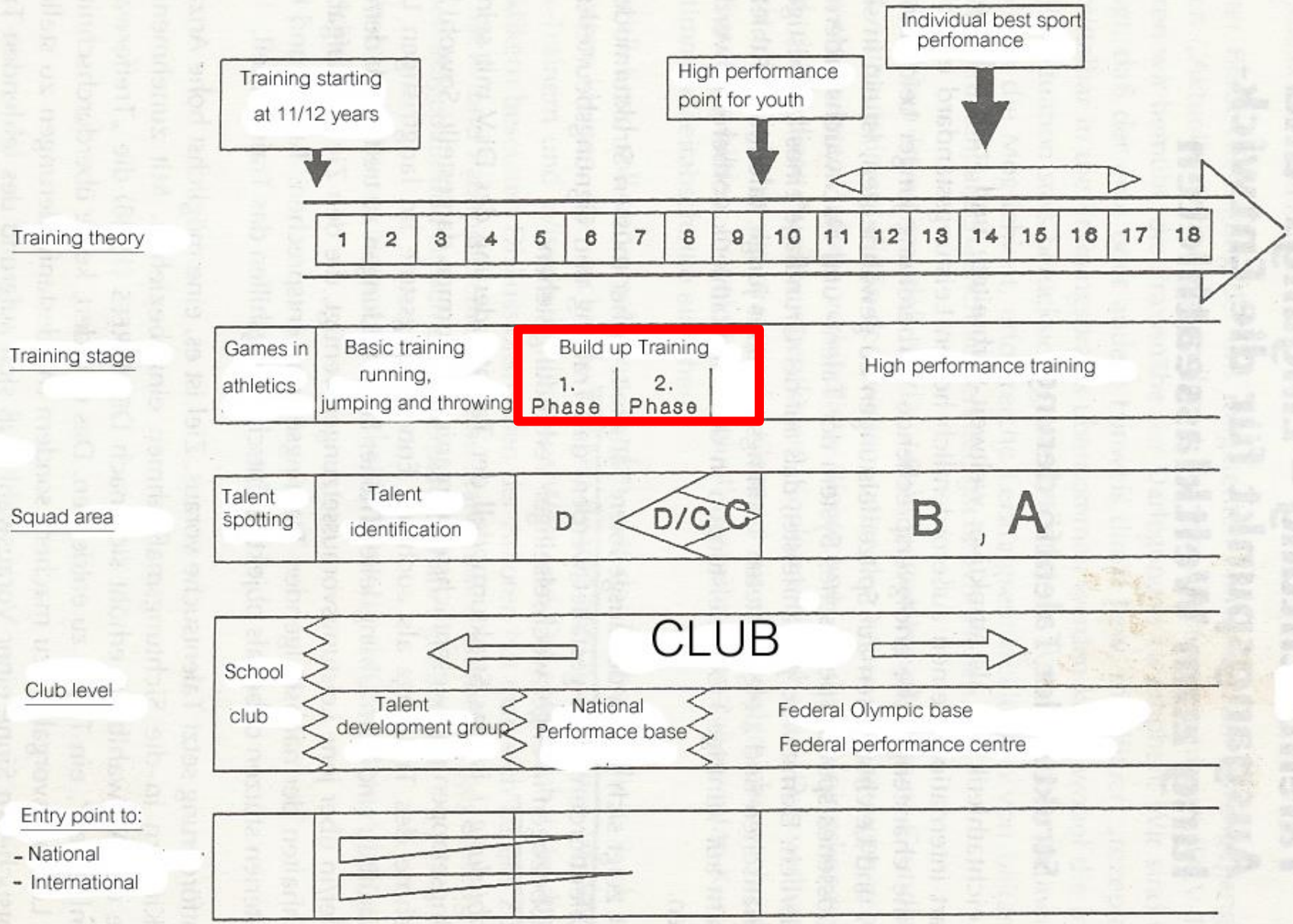
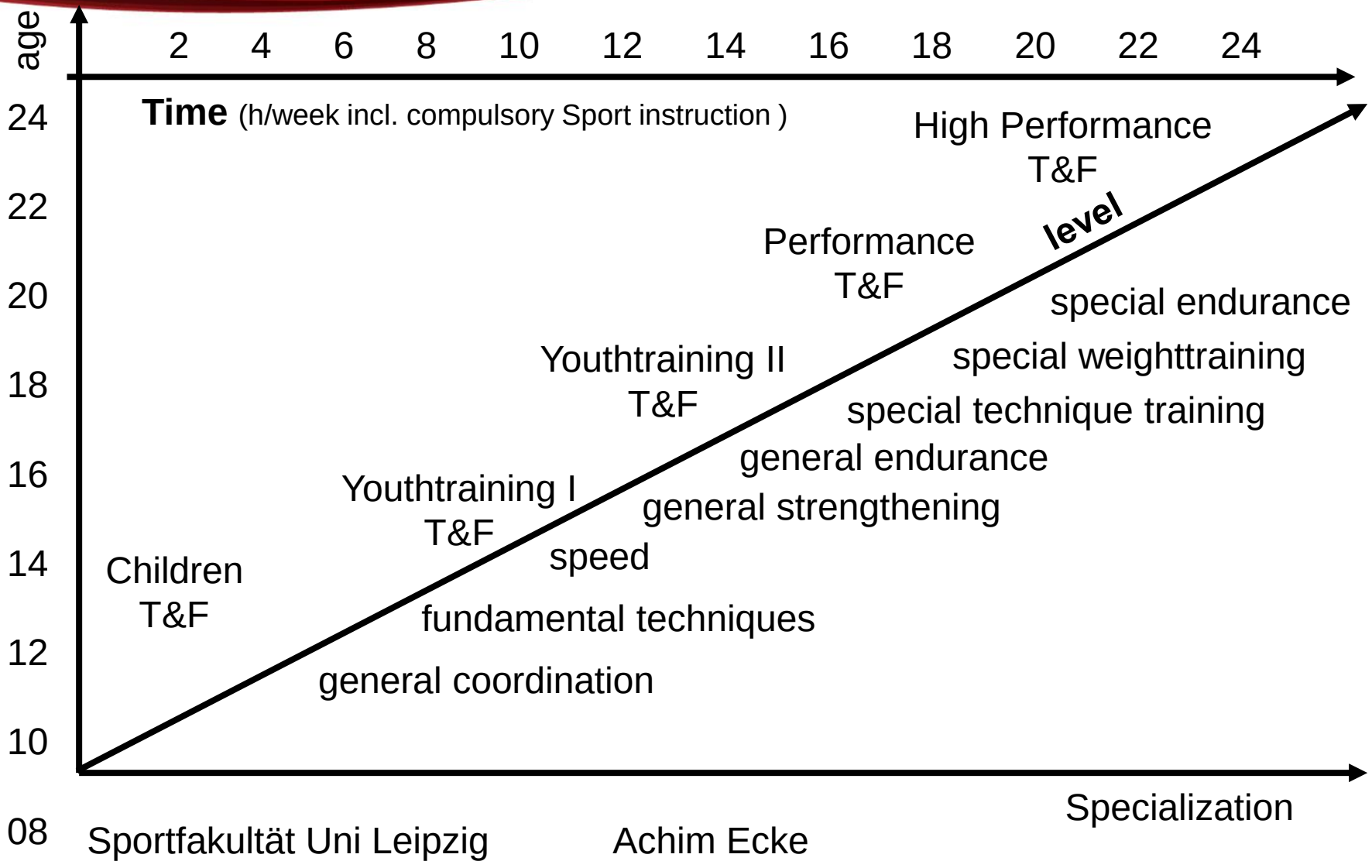


FIG 1: STRUCTURE OF TALENT DEVELOPMENT IN GERMAN ATHLETICS FEDERATION



DLV / Schubert, Bernd: Vom Anfänger zum Top Leichtathleten 1993

Aspects of Development

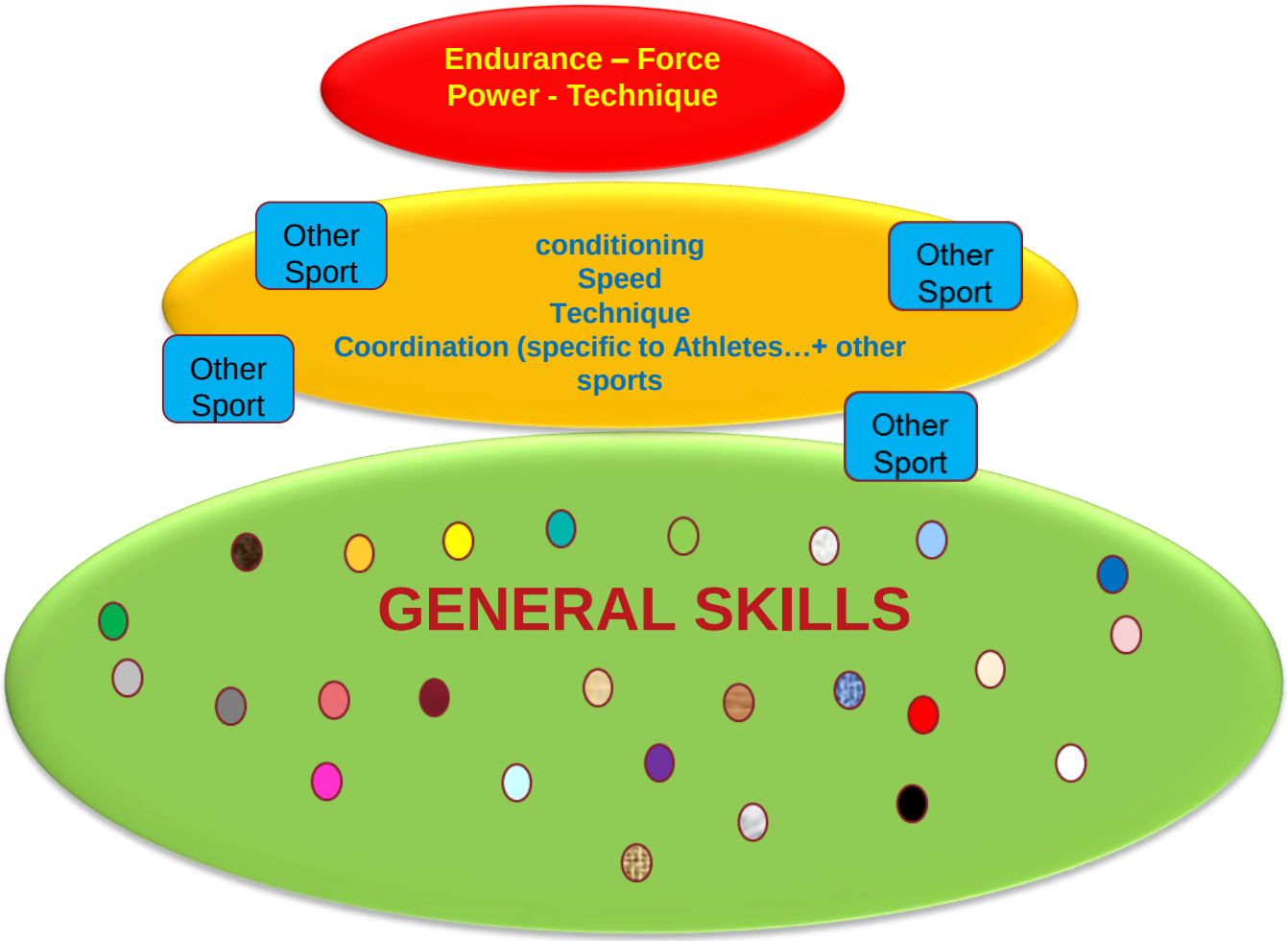


Continuum from Kids to Elites

U 18

U 16

U12



Thank you for your attention

If I had eight hours to chop down a tree I would spend six of them sharpening the axe.

(Abraham Lincoln)