

Leichtathletik: Trainings- und Bewegungswissenschaft – Theorie und Praxis aller Disziplinen

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by Heiko K. Strüder, Ulrich Jonath und Kai Scholz

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There are a lot of textbooks on athletics available. However, most of these books deal with the individual athletics events or with group of events, as for example, distance running, the jumps, the throws, or the sprints and the hurdles. This is quite understandable, because track-and-field athletics is an extremely heterogeneous sport and the overlap between, for example, the discus throw and the middle-distance races is almost non-existent. Authors who are so competent to cover all athletics disciplines are very rare. That is why most of the few textbooks dealing with athletics as a whole are compilations of contributions from experts for the various events. This applies, for example, to the famous German textbook edited by Gerhardt Schmolinsky, *Leichtathletik* (10th ed., 1980) (in English: *Track and Field*, 2nd ed., 1983), or *Grundlagen der Leichtathletik* (5th ed., 1998) edited by Karl-Heinz Bauersfeld. In original English, a typical example of these kinds of books is the *USA Track & Field Coaching Manual*, coordinated by Joseph L. Rogers (2000). The only English book about the whole of track-and-field athletics by one author is, to my knowledge, Ken Doherty's *Track & Field Omnibook* (5th ed., 2007).

Against this background, the all-encompassing book *Leichtathletik: Trainings- und Bewegungswissenschaft – Theorie und Praxis aller Disziplinen* (in English: "Track and Field Athletics: Training and Movement Science – Theory and Practice of all Disciplines") deserves the highest attention because it includes the latest knowledge concerning all



track-and-field disciplines presented in over 900 pages.

Who are the authors of this book? Professor Dr. Heiko K. Strüder is the Director of the Institute of Movement and Neurosciences at the German Sport University Cologne and is responsible for the training and movement

science of individual sports. Ulrich Jonath is the retired head of teaching in the Athletics Department of the German Sport University in Cologne. He was also a lecturer at the Cologne Coaches' Academy, National Coach of the German Athletics Federation (DLV), and coach instructor for the IAAF. He is the author of numerous athletics textbooks and instructional films. Kai Scholz is a sports teacher, certified A-level coach for the DLV, and teacher for athletics at the German Sport University in Cologne. Together, these authors make up a team that almost ideally represents both the scientific and practical aspects of athletics. It should also be mentioned that the following people were involved in the proofreading of the texts for the book: Prof. Dr. Wildor Hollmann, Dr. Axel Knicker, Dr. Wolfgang Ritzdorf, and Dr. Norbert Stein.

Their textbook is loosely based on the three textbooks about running (vol. 1), jumping (vol. 2), as well as throwing and the combined events (vol. 3) by Jonath, Krempel, Haag, and Müller published by Rowohlt in 1995. Since this three-volume textbook was recommended by the IAAF (although an English version was not available commercially) it became very popular even abroad.

However, the present book has almost no similarity with its distant predecessor. Progress and modern knowledge in the various fields of sports science has required an intensive revision and update of the contents. The result is a comprehensive textbook with a completely new design.

Modern athletics training is characterized by two factors: On the one hand, experiences and opinions and thus training methods and contents are passed from one successful generation of coaches on to the next generation. On the other hand, the current findings of sports science have a great influence on training. Both factors are closely interlinked and each factor has its own advantages and disadvantages. This book attempts to represent athletics in all its complexity and as a symbiotic interaction of training science and practice. As far as practical training is concerned, the individual

coach's intuition and know-how is as important as a sound scientific foundation. This new textbook bears testimony to this basic truth.

The book includes a general section that applies to all athletics events and deals with the following areas:

- Interdisciplinary aspects of athletics training;
- Motor forms of exertion (coordination, flexibility, speed-strength, speed, and endurance);
- Adaptation and performance ability (training and load organization, super-compensation and overload, overtraining syndrome, hierarchy and brain plasticity, the brain as a performance-limiting factor);
- Training control (target-value analysis, actual-value analysis and test/control methods, training planning, objectives, periodization phases, periodization models, model training plans for children's athletics and basic training);
- Training methods (coordination training, flexibility training, strength training, speed training, endurance training);
- General training contents (preparation and loading, coordination: play and exercise forms, flexibility: exercise forms, strength: play and exercise forms, warm-down).

In the discipline-specific section, all Olympic disciplines of athletics are dealt with. In each case the respective discipline is introduced by an anecdotal and historical chapter. Then, the following aspects are covered:

- Competition rules;
- Findings from sports science, phase structure and technique;
- Summary of the most important technique characteristics and technique analysis sheet;
- Picture sequence;
- Tactics of the event;
- Didactics of the event;
- Training contents;
- Special test and control procedures;
- Faults, their causes and corrections;
- Training planning.

The latest findings from training practice are presented taking into account the available na-

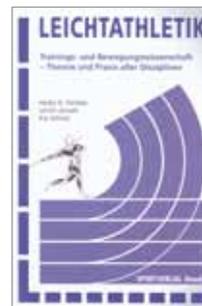
tional and international training literature. The picture sequences illustrating the technique of each discipline show the world's best athletes and are accompanied by an expert's commentary. The various examples of training planning can be used as guidelines for the different age groups. Each discipline-specific chapter is based on current findings from training and movement science and takes into account the demands made on the athletes. Diagnostic methods for the optimization and operationalization of the training process are also included for each discipline. The description of the respective movement techniques are supplemented by the results of biomechanical studies of world-class athletes and the exact representation of the performance determining parameters. The training sections are very detailed in order to illustrate the state of modern training methodology.

The very extensive and detailed index enables readers to access the contents of the textbook selectively and in a cross-disciplinary manner.

This new textbook is designed for coaches, physical education teachers, athletes and sports scientists. It is a useful handbook both for people who want to get an overview of athletics in general, and for advanced and specialized readers who want to deal with one discipline in detail.

In summary, this new and comprehensive German textbook of athletics is the most up-to-date book on this topic currently on the market. Therefore, it is a must for all people involved with and interested in athletics. Its only disadvantage is that at present it is only available in German. An English translation would be highly desirable.

Reviewed by Jürgen Schiffer



Heiko K. Strüder, Ulrich Jonath und Kai Scholz
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