Training the young athlete for the horizontal jumps

James Slepica

The author offers the coach guidelines and methods for training the young athlete in the horizontal jumps. With the aid of a detailed table he outlines the specific stages in the development of a young horizontal jumper, and their coaching implications, stressing the importance of a flexible training plan with a long-range view of the athlete's progress from beginner to elite. He emphasizes the dangers involved in early specialization, high expectation and excessive training loads, concluding that it is the coach's responsibility to make what he imparts to his young athletes both appropriate and above all enjoyable.

1 Introduction

The purpose of this article is to provide the coach with considerations, guidelines and methods for training the young athlete in the horizontal jumps.

The goal which must be kept in mind is 'long-range' development: general preparation in the early years leading to specialization at an elite level. In this respect, some recent developments in youth athletics and the horizontal jumps are particularly worthy of comment.

Over the past 20 years the horizontal jumps have attracted more and more attention, with headline names such as Lewis, Markov, Emmitian and Drechsler making them feature events at our biggest championships.

Due both to this increase in popularity and the institution in 1986 of the World Junior Championships in Athletics, coaches, athletes and decision-making powers around the world find themselves in a dilemma. They are forced to throw very young athletes into high-level competition, exposing them to the same expectation of achievement and perfection as an athlete representing his or her country at an Olympic Games.

Moreover, the promotion of competitions and records for young athletes has produced some unscrupulous coaches who are prepared to do almost anything to at-
tain the status and prestige involved in producing a world age-group best.

Coaching and research must be aware of these areas of danger, and concentrate on promoting a long-term progression to elite competition.

2 Introducing the young athlete to the horizontal jumps

While most modern research centres on the performances of the elite, it is perhaps of greater value to look more closely at the movements of the young athlete during the initial stages of learning a task. Understanding how the environment is perceived through his eyes, and what limitations are imposed upon him by his physical, mental and emotional experience, can reveal information that cannot be obtained from a study of more advanced, upper range skills.

The young athlete's initial contact with long and triple jumping as a 'sport' occurs early in his schooldays. It is essential when introducing him to the technical demands of the event that methods used for training elite athletes are not applied to the beginner. Age-specific skills and drills as an extension of play are appropriate at this stage.

Jumping technique can be developed in various ways, and sessions designed to improve both running and throwing may incorporate elements of horizontal jumps training. In this way early specialization can be avoided. Such exercises may be introduced in movement-orientated classes at primary school level, in games, and in creatively implemented competitive sessions.

Moreover, the teacher or coach should always be sensitive to the dynamic nature of the youth organism. It cannot be over-emphasized that the seeds of development laid by the coach can significantly affect the athletic outcome in 10 or even 20 years time. There are certain periods in a child's life when conditions exist which are most favourable in achieving a desired training aim. Conversely, it may be necessary to avoid particular training measures and loadings during certain biological stages of development. Table I (pages xx) outlines the specific stages of development and coaching implications for training the young horizontal jumper.

During the early years of training, as the child's physiological systems develop, so too does the capacity for work. Knowledge of the dynamic nature of the youth organism is therefore vital, and caution should be taken in categorizing or labelling an athlete according to chronological age. Of more relevance to the coach is the level of growth and maturity of the athlete, or his developmental age.

This is unique in the case of each athlete, and so he should always be regarded as an individual. Inaccurate evaluation of a young athlete's state of progress, and thus unwarranted changes in the training programme, usually results in an individual who is severely overtrained and prematurely burned out. The athlete must be allowed to develop at his own rate.

In his address to the OTFA coaching symposium in 1984, BAF National Director of Coaching Frank Dick attempted to summarize the special categorical needs of the young athlete. Some interesting points were made as general guidelines for youth training.

1 Intermittent sub-maximal loading (80-90 %) stimulates height growth. Excessive loads inhibit it. Optimal loading levels should be followed by sufficient regeneration of the biostructure.
2 Stimulus and recovery are the main constituents of loading. Active and passive recovery must be built into the training programme, which above all else is characterized by variety.
3 Aerobic training should not be structured into the training programme in the developing years, but should be present in the guise of games and play activities.
4 In the pre-pubescent child, muscle biochemistry does not favour anaerobic activity.
5 The presence of high androgenic hormonal activity in females dictates the need for strength training once the growth spurt is complete, but before sexual maturity is reached.
6 Recovery should fully restore biological function. Progressive loadings should not permit cumulative fatigue.
7 Speed endurance and strength endurance should be avoided until biological maturity is reached.

3 Considering a training plan

'Training is a complex series of actions aimed at influencing the development of performance in sport in a systematic and goal-orientated way.' (Kayser, 1987)

It is generally agreed that youth training should be aimed at speed and technical-tactical development through the employment of a wide range of exercises. These exercises constitute a 'building process'; phases or stages of multiple kinds of stimuli compound in step-like fashion to achieve long-range results. The systematic element denotes the building, cumulative effect of certain prescribed stimuli on the youth organism. It encompasses not only skill and physical development, but social, emotional, psychological and intellectual facets of the total being.

Because training is goal-orientated, the coach and the athlete are purposefully working towards a desired end which may have both short- and long-term characteristics.

The effects of training can be immediate, delayed or residual in nature, depending on the type and duration of the stimulus, as well as its timing and sequence. This is where the science, as well as the art, of coaching comes into play. In creating the training plan, the coach must consider the entire picture, the framework of which is dependent on the contribution of each of its parts.

The training plan for the young jumper needs to have a structure, of course, but it must also be flexible. The lifestyle of today's young athlete in the modern Western world does not favour the formal periodization models in use in more rigidly structured societies. A plan must be pliant enough to co-ordinate with special events in the athlete's personal sphere, such as the availability of training facilities, weather, personal injury, economics, family problems and the athlete's goals (which can and do change at any given moment). The peculiar characteristics of a single or double periodization model can indeed provide the necessary framework for long-range development, but they may fail to take into consideration the uniqueness and individuality of athletes in all societies.

In order to monitor the progress achieved by the young jumper, control systems are an integral part of the training plan. The athlete is intermittently subjected to a variety of tests throughout the school/train-
<table>
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<tr>
<th>Age</th>
<th>Characteristics of anatomic development</th>
<th>Coaching implications</th>
<th>Training outcome</th>
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<tr>
<td>11-12</td>
<td>biological maturation; motor individuality in place; rapid maturation of the speed strength abilities; high CNS capacity; co-ordinative abilities have the greatest developmental effect prior to this age</td>
<td>increase the volume of the loads and the number of ways and means to improve acceleration (increase in speed) and absolute speed (stride length and frequency), i.e. speed work-outs at high intensity - 0-30m and 30-60m, games with speed bursts, circuits, etc.; development of reaction speed</td>
<td>increase in segment and horizontal speed; increase in co-ordination of movement and reaction time; increase in awareness and kinaesthesia; increased enjoyment; multi-skill development; progression of skill development; imitative and lead-up exercises</td>
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<td>12</td>
<td>until 12 years no major differences in physical maturation of boys and girls; then girls begin to surpass boys in height and weight and sexual maturation</td>
<td>beginning of technical foundation in the horizontal jumps; need to teach the fundamental techniques such as the take-off mechanism, the hitch kick, the Triple Jump rhythm and landings</td>
<td>introduction to jumping as a sport in itself</td>
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<td>12-13</td>
<td>body growth increases more rapidly than muscle mass; increase in height of 8-11 cm; uneven skeletal development; increase in co-ordinative abilities</td>
<td>more running and jumping than strength work; avoid weight training (free and multi-gym); avoid jumps from great heights; avoid excessive volumes of jumps training; avoid the Triple Jump for girls at this age; improve flight phase technique</td>
<td>excessive landings may cause displacement of pelvic bones (may not knit together properly); may lead to flattening of the feet; may inhibit development of sexual organs in girls</td>
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<tr>
<td>Age</td>
<td>Description</td>
<td>Tips</td>
<td>Additional Information</td>
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<td>13-14</td>
<td>greater control of movements; increase in height; greater movement capacity, especially in take-off actions</td>
<td>attend to velocity and rhythm structure of pre-take-off and take-off movements (LJ and TJ); refine the timing and synchronization of free limbs, use of free arms, control of head and neck etc.</td>
<td>conditioning for tolerance of training loads; development of jumping endurance; carefully contrived competitions for motivational purposes</td>
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<td>14</td>
<td>stabilization (or even deterioration) of speed strength capacities in girls</td>
<td>avoid jumps with weights, depth jumps, landings on hard ground (use mats or jump on grass); single and double leg jumps (vertical only); continuation of speed work</td>
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<td>14-15</td>
<td>stabilization of co-ordinative and CNS abilities with reference to running and jumping</td>
<td>important to expose the female to regular strength training (after growth spurt)</td>
<td>introduce competitive-type jumping activities</td>
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<td>15-16</td>
<td>further increase in height, but at a slower rate than before</td>
<td>attention to the finer elements of jumping technique; need to work on multiple (successive) jumps with one and/or both legs (include horizontal); transition from approach to take-off should be well trained at this stage</td>
<td>specialization in jumping events</td>
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<td>16-17</td>
<td>stabilization in speed strength capacities in boys; strength increases</td>
<td>tendency to increase approach run length; introduction of newer levels of approach speed; must allow mechanism to adapt to changes in horizontal capacity; introduction to resistance weight training</td>
<td>increase in approach run cadence and tempo; techniques become automatic; higher levels of technique are sought; performance variables trained; improved (competitive) performance in horizontal jumps is sought; higher levels of competition fitness and preparation achieved</td>
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<td>16-18</td>
<td>slight intensification of co-ordinative abilities (perhaps borne by increases in muscularity and therefore in strength capacity) - breakthrough-type movements occur</td>
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ing year in a non-threatening, and even fun, way. This:
a) provides feedback to the athlete and coach relative to the goal(s) for that block of training;
b) aids evaluation of the programme (training plan) up to that point in training;
c) allows for prognosis of future performances, and, hence, for further adaptations to the plan.

Once the young athlete progresses into later stages of training (after 3-5 years of base training), competitions are introduced into the yearly plan. Competitions (as in number, timing, purpose, and importance) are strictly controlled by the coach. They should be arranged so that the participant enjoys a positive experience during which winning is de-emphasized. Self-improvement and elevation of self-esteem are necessary by-products of early competitions.

4 Summary

The role of the coach in youth athletics is both highly rewarding and immensely challenging. Confronted by the present state of athletics, he must make what he imparts to his athletes both appropriate and enjoyable. He must be conscious in providing the imprints of success in the early years, while remaining aware of the dangers of early specialization, high expectation and excessive training loads. Above all, the goal must be the promotion of a gradual and progressive development from beginner to elite jumper.

REFERENCES
