The Test Decathlon for the Evaluation of Track and Field Athletes

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Evaluative tests play an important role in athletic development. These tests can be a useful tool for both the athlete and coach. They can be used for talent identification, contest preparation, and to analyze the effects of training. The goal of this article is to present a battery or series of tests that can be used to accurately and validly evaluate all of these qualities. The name of the proposed testing format is the Test Decathlon.

The Test Decathlon is a series of 10 performance tests performed over two days that can be used by coaches for several purposes. The test is easily modified to meet the needs of the coach. The test can be used for evaluating talent, monitoring athlete progress, and developing event familiarity in multi-eventers. The standard format and guidelines for the test can be seen in Figure 1.

The most important characteristics of a test are validity, reliability, and objectivity. Validity refers to the degree that a test measures what it is supposed to measure; reliability refers to the repeatability of the test; and objectivity refers to the degree to which multiple scorers agree on the magnitude of scores.[1] The Test Decathlon meets all of these requirements. The test objectively and accurately evaluates the performance variables of a wide range of events. It does this without being so technical that results reflect technique mastery (or deficiency) rather than event-fitness or event-potential.

There are two problems with other tests commonly used for these purposes: either they do not closely simulate the biomotor qualities of actual track and field events or the range of events is too narrow to truly evaluate the event-fitness or event-potential of an athlete. This is especially true when using tests for talent identification.

For high school and age-group coaches, the most important use for the Test Decathlon will come as a means of evaluating talent. Most coaches lack an organized system for identifying and selecting track and field talent. A good talent identification program using test performances can be very helpful to coaches. Many European nations, most notably those of our former “cold war” enemies, have achieved great success with the help of talent identification. The most beneficial aspect of talent identification is that it allows coaches to place athletes in events where they are most likely to succeed. This is beneficial to both the athlete and the coach. Talent evaluation eliminates the “trial and error” approach used by most high school coaches. This “trial and error” approach typically allows athletes to choose their own events regardless of their obvious strengths or weaknesses. The problem with this is that almost every kid that comes out for track wants to be a 100m superstar. However, as we all know, not every athlete is blessed with the tools to succeed in this event. Because of this, coaches must find events for athletes that will best take advantage of their individual strengths. The Test Decathlon gives coaches a method to do this. The time spent performing this test is easily recovered in the time that is not wasted on training athletes for events in which they will eventually move

away from. The Test Decathlon provides coaches a means of determining an athlete's strengths without having to experiment in a meet situation.

When using the Test Decathlon for talent evaluation the standard format should be used and coaches should look at which test(s) each athlete performs best. Figure 2 shows which tests have the highest correlation to which track and field events. An effective way of evaluating team results would be to divide the results of each test into thirds. The top third show potential for the corresponding event, the bottom third probably does not.

Another use for the test is in monitoring an athletes' progress. This is especially beneficial when an athlete is in training year-round. The Test Decathlon quantitatively evaluates performance indicators for practically all track and field athletes. When using the test for such purposes, only three or four events should be selected for a given event. The tests for each event are the same tests selected for talent identification of a given event (Figure 2). Results of the test may be used to indicate training effectiveness, strengths or weaknesses of an athlete, or to predict performances. Performances can be predicted once the coach establishes a correlation with a given athlete's test results and their event performance.

A final use of the Test Decathlon is to give event-familiarity to multi-eventers. Multi-eventers have relatively few opportunities to compete in their event in any given season. As a result, the athlete may not have the opportunity to become familiar with the specific demands of their event. Because of this, it is critical for them to become highly competent at being able to put together a good series of marks. Multi-eventers need to be able to complete the series of events without undue fatigue; and be able to stay focused on the total event (the decathlon or heptathlon) even when the unexpected occurs. The Test Decathlon gives athletes a chance to successfully simulate a multi-event in training. The multi-event format of the Test Decathlon (Figure 3) closely replicates the demands of the event: explosive power, event-specific endurance, and mental fortitude.

Norms for these tests can easily be developed by the coach. In doing this, the norms are more specific to individual coaching programs and can take into account the gender, age, and competitive level of the athlete[2]. Scoring tables similar to those of the multi-events can be developed after several years of collecting test results. A simple 100-point scoring table would be recommended.

The Test Decathlon offers coaches a way to identify talent, monitor athlete progress, and provide competitive familiarity. The greatest thing about this test design is that the individual tests accurately evaluate the performance variables for almost every event without being too technical or difficult to perform. Not only is the test easy for athletes to perform and coaches to conduct, but it also requires little equipment, and can be a fun yet competitive break from the rigors of day-to-day training. In addition, the test can be easily modified to suit the needs of the coach and can be a helpful tool for coaches at all levels.

**********The author of this article has developed a calculator for the scoring of the test decathlon. If you are interested in a MS Excel version of this calculator please contact Mike Young at mike@elitetrack.com

Fig. 1: Test Decathlon Standard Format and Guidelines

Test	Trials	Guidelines
10m	3 attempts	Athlete starts from a 3-point stance, timing begins with movement of the support hand.
30m	3 attempt	Athlete starts from a 3-point stance, timing begins on the 3 command start of the timer.
250m	1 attempt	Athlete starts from a 3-point stance, timing begins on the 3 command start of the timer.
1000m	1 attempt	Athlete starts from a standing position, timing begins on the 2 command start of the timer.
4H	3 attempts	Athlete starts from a 3-pt stance, timing begins on the 3-command start of the timer. Hurdles should be 6" below competition height and spaced 1.5m closer than the competition distance. The finish should be 5m from the last hurdle. Some college and elite athletes may need to use competition distances between hurdles.
LJ Take-Off	3 attempts	From a 5-step approach, athlete takes off as in the long jump but rather than extending the legs as in long jump technique, the athlete holds the block position (take-off leg extended down, opposite leg held at 90 degrees). The measurement is taken from the point of takeoff to the heel of the back (take-off) foot.
Scissor HJ	2 misses per clearance.	From a 3-step approach, the athlete must successfully clear the bar using the scissor technique.
50m bounds	1 attempt	From a standing start the athlete performs bounds over 50m trying to cover the distance in as few bounds as possible. Performance is measured in the total number of bounds needed for the athlete to cover the 50m. The count starts from the first bound made out of the standing start.
Underhand SP	3 attempts	Standing on the shotput toe board facing the sector, the shot is swung between the legs and thrown for distance. A competition weight shot for that age / level / sex athlete should be used.
Wtd. Ball Throw	3 attempts	The athlete throws a weighted ball from a standing or 3-step approach using an overhand javelin-like throw. High school men and above should use a 1kg ball; highscool women and above should use an 800g ball. All athletes below the highschool level should use a softball.

Fig. 2- Event-Test Correlations

(The following tests have high correlation with the corresponding events and should be used as tests for event fitness and talent evaluation)

Events	Tests with Highest Correlations
100m / 200m	10m, 30m, 250m, 50m bounds
200m / 400m	30m, 250m, 1000m, 50m bounds
400m / 800m	250m, 1000m, 30m, 50m bounds
Middle Distance	1000m, 250m, 50m bounds
110HH / 100HH	4Hurdles, 30m, 250m, 50m bounds
400H	250m, 4Hurdles, 1000m, 50m bounds
SP / Discus / Hammer	UH SP, 10m, 30m, Weighted ball throw
Javelin	Weighted ball throw, 10m, Scissor HJ, 50m bounds
Long Jump	10m, 30m, 250m, LJ
Triple Jump	50m bounds, 10m, LJ, 30m
High Jump	Scissor HJ, 50m bounds, 30m, UH SP
Pole Vault	10m, LJ, 250m, UH SP

Figure 3: multi-event format for heptathlete / decathlete testing

Test Heptathlon

Day 1	Day 2
4 Hurdles	LJ
UH SP	Wtd. Ball
Scissor HJ	600m
150m	

Test Decathlon

Day 1	Day 2
30m	4 Hurdles
LJ	50m bounds
UH SP	Wtd. Ball Throw
Scissor HJ	10m sprint
250m run	1000m run

[1]Semenick, D. (1994) Selecting Appropriate Tests in T. Baechle (Ed.) Essentials of Strength and Conditioning. (1st ed.). Champaign, IL: Human Kinetics. pp. 250-253.

[2] Pfaff, D. (1993, March). Norm based field testing. New Studies in Athletics. 8:1 51-55.