Planning Technical Training for the Track and Field Athlete
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Introduction

Most coaches spend hours painstakingly planning every detail of the training program, and periodize their training with great detail. Often, not nearly as much time and effort is devoted to periodization of the technical plan. Planning the teaching of necessary technical skills is as crucial to success as fitness levels, and should be considered just as closely. The purpose of this article is to provide guidelines for periodization of the technical training year and choosing training activities for each session.

Drills and Teaching Progressions

Good teaching progressions and drills are often considered a panacea in athletics, and are pursued relentlessly. Often in this pursuit, we lose sight of the actual purpose of these activities. So often well meaning coaches want a progression of drills that, when completed, produces a technically perfect athlete. This happens rarely and only by chance.

A coach should realize that a drill is not a teacher, but an opportunity to teach. Certain fundamentals should be identified prior to practice, then taught and rehearsed within the context of the drill. The effectiveness of a drill has little to do with the drill itself. Its effectiveness is determined by the skill the coach uses in identifying fundamentals and recognizing chances to teach them in within the drill.

Phases of Training

The technical training year should be divided into phases of training, just as we divide the year into phases in our fitness training. Before naming and elaborating on the content of these phases, we should state that each is a process, not just a period of time. We break the year into these phases for the sake of discussion, yet these phases blend smoothly into each other and indicate an evolutionary process that should be unfolding.

Drills and Partial Skills

Generally, we should start with a period of drills and partial skills. The drills in this phase provide an opportunity to address fundamentals. The partial skills are basically just that…. the actual competitive event broken into manageable teaching portions.

While this is a necessary and useful time, we must realize that the key purpose of this period is to familiarize the athlete with certain concepts so that a basic understanding of concepts is developed prior to bringing them to the whole event. The purpose here is not to develop complete mastery of them. Mastery should be developed within the event itself, and generally speaking, most programs spend far too much time in this period.

Synthesis

A period of synthesis of these fundamentals should come next. During this period fundamentals are brought to and implanted into the event. The partial skills learned are synthesized into bigger parts and eventually a model that resembles the competitive event.

This process includes not only synthesis of these parts, but also the increase of demands until the practice session involves intensities and speeds that approach those of competition. Generally speaking, the planned synthesis period should be complete prior to the start of the competitive season.

Problem Solving

Finally, a period of problem solving should be planned. Regardless of the effectiveness of the teaching and planning, problems arise. In spite of high mastery of spatial concepts in the early stages of learning, temporal and rhythmic demands differ, and much time must be allotted for these adaptations.

The key element of and reason for the necessity of this problem-solving period is the adaptation to competitive demands. Competitive demands are higher than those we create in practice, so technical breakdowns will occur at this point. This is why we generally associate the problem-solving period with the competitive season.

Some coaches try to create competitive type situations in practice in an effort to prevent these problems. These attempts usually fail, because emotional and arousal factors present in competition are seldom present in practice. For this reason, it is often best to schedule competitions so that the first few can effectively serve as very specific practices.

Radical Changes

One additional phase must sometimes be included. This would be a period of time for radical technical changes. Any radical change that must be accomplished should be done so that much time is available prior to competition. Thus if this phase is required, it should precede the other three.

Drills and Phases of Training

It should be noted that while a drill may be very useful for teaching a particular element of technique, it may but be appropriate at all times. For example, a particular drill may be very effective for isolating and teaching the trail leg motion in the hurdles in the early stages of learning. This drill, while effective then, would be a poor choice for fixing a fault in this area during the late competitive season because it addresses the fault outside the context of the whole movement. We must use drills and technical exercises that are appropriate to the phases of technical training above.

The Overload Principle

All coaches have an inherit understanding of the overload principle. The human organism is adaptable, but will only adapt to a stimulus to which it is unaccustomed. The demands of training must increase over time if increased fitness levels are to be gained.

The overload principle must be considered in the learning environment as well. Each technical training session provides a stimulus. The demands of this stimulus must be increased over time for learning to occur and continue.

Mastery of a skill is our ultimate goal, and an admirable one. Yet, mastery of a skill at a particular level cannot be attained until the level of the training stimulus has surpassed that level. Expecting mastery to occur without an increase in the level of the training stimulus is unreasonable and halts progress. When mastery is partially (but not completely) achieved, then training stimulus should become more demanding so that learning will continue to occur.

For example, lets consider a male shot putter in the developmental stage, throwing a lighter shot in the practice environment. Lets say that this shot putter exhibits 90 percent mastery of the skill at this level, but still exhibits a few minor faults. We could, in spite of the fact that perfection hasn't been attained with the light shot, progress to a slightly heavier shot for a session. This would increase the intensity of the stimulus. When the athlete returns to the lighter shot, it feels more comfortable than before, and he demonstrates a higher level of mastery than he did before working with the heavier shot.

Of course, a high degree of mastery is required before we increase the demands as such. We can, just as we can in training, increase demands and difficulty too quickly. But, to expect mastery without any such increase is unreasonable. We must realize that the increase in training demands will always precede an increase in mastery.

This increase in demand should be progressive, and may take many forms. Heavier implements, more complex exercises, longer approach runs, and increased velocities. Are common tools coaches may use to achieve this overload.

Whole vs. Part Practice

We have briefly commented earlier separately about partial learning and synthesis. Lets now examine these activities by contrasting them. The debates over the benefits of whole practice and partial practice have raged for some time, and will continue.

Partial practice serves as a more controlled, effective atmosphere for teaching rudimentary concepts, but for the beginner it may be confusing, as it is tough for a beginner to see how the skill fits in. Whole practice presents such a great number of variables that coaching purely within this context (before some understanding of rudimentary skills is established) may be confusing.

Yet, it is inarguable that whole practice is more specific and more demanding. Therefore, if the demands of the practice stimulus are to be increased, whole practice has a valuable place in these training schema.

Variety in Practice

Motor learning research tells us much about variance in the practice environment. While variety in practice may not improve performance in practice, variety in the practice environment does improve performance in competition. Variety in training forces the athlete to adapt in a variety of ways, learning to deal with a greater variety of situations and becoming better at adaptation itself. Variance in the practice environment is necessary to foster a conducive learning atmosphere.

The increase in demands of the stimulus we have just discussed is just one form of this. Others must be used in order to maximize the learning achieved in the time available. Changing the drills used, exercise choice, approach run length, implement weight, hurdle height, drill sequence, or location in the training regimen can all be used to create this variety. This does not mean an infinite number of drills and exercises must be taught. Using certain ones for a period of time, going on to others, then returning to the original ones can be sufficient.

Scheduling of these changes can take many forms. They may be altered in a cyclic fashion on a daily, weekly, and or monthly basis. For example, lets assume that we will schedule two triple jump technical training sessions per week. For one month, the first session could consist of triple jumping from a seven step approach. The second could consist of drills that are different from but related to the event, such as various combinations of bounds. During the next month, the first session could consist of triple jumping again but from a longer nine step approach. The second could be a review session of remedial drills done earlier in the training year.

Purposes of Practice

One goal of technical training practice is obvious. Its purpose is to teach and perfect the execution of the skill. Generally speaking, with developmental athletes, the first part of the training year is dedicated to teaching this skill to a level that will enable the athlete to execute it flawlessly under the demands of competition.

There is a second goal however, and an often neglected one. Once the skill is taught, what are we trying to accomplish with these practices the remainder of the year? These practices provide an opportunity for coaches to develop and rehearse cues they will give their athletes during competition and examine athlete's responses to them. These practices give athletes an opportunity to practice responses to these cues and develop understanding of them. In short, the goal of these practices, once the skill is learned, is to rehearse athlete-coach communication during competition.

It is important that we keep this second goal in mind later in the season. As important competitions approach, a wise is using past competition experience to determine what problems are likely to arise, and is, with the athlete, developing dialog and cues in practice to handle these situations.

Contrast in the Practice Environment

As stated earlier, the earlier parts of the training year is devoted to teaching the skill, then preparing the athlete to execute it under the demands of competition. We also stated that the goals later shift to a rehearsal of meet dialog, cues, and responses. During this time, since the purpose of practice changes, so must the intensity of the practice stimulus.

Sometimes, skills are so similar that the body becomes confused and finds it difficult to effectively shift from one skill to another while executing both well. At this time of year, ideally the athlete is keenly attuned to competitive velocities and intensities. Velocities and intensities in practice that are only slightly different than those in competition only serve to confuse.

For this reason, it is best to provide a sharp contrast in intensities between practice and competition. Slower practice velocities and lower practice intensities still provide an opportunity to develop and rehearse cues and responses. At the same time, the different velocity enables the body to interpret practice and the meet as differing skills, rather than similar ones that interfere with each other.

For example, a pole vaulter may spend time vaulting from an 18 step, meet length approach in practice in the weeks prior to the start of the competitive season, and will probably continue to do so for a few weeks after the season has started. At some time, however, having the vaulter practice from a 10 step approach would provide contrast to the meet approach and minimize interference. The vaulter could continue to practice the competition approach in a different manner, drilling without a takeoff or with a sliding box, for example.

It is important to note that the decrease in intensity advocated here pertains only to specific technical training sessions, not to the remainder of the athlete's fitness training regimen.

Conclusion

In closing, the acquisition of technical skill is often by chance. Proper planning and applying the principles of training theory to the motor learning field can result in much more effective teaching in much shorter periods of time.