Soccer Speed Development System Based on the Movements of the Game

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Speed agility and quickness training has become prevalent in many soccer training programs around the world. This attests to the importance of speed and agility to peak soccer performance, and the fact that these important factors can be improved through training. While much literature exists outlining speed and agility drills, these do not always follow a logical sequential pattern of development.

If speed and agility are seen as skills, then they should be subjected to the same type of skill development program, as any other sport skills, such as pitching a baseball, throwing a football, passing a soccer ball etc. In the sport specific cases there is normally a well practiced development program in place which starts with the fundamentals, and then develops the skill through planned stages of development until it can be effectively carried out in sport specific environments. At all times in this progression, each developmental stage is based upon the foundation work carried out in the previous stages. In addition each part of a movement is practiced in terms of its function on the field of play.

Unfortunately, many agility programs are not based on such a sequence of development, and no fundamental movements are identified. This lack of fundamental identification and subsequent development means that many of the key movements do not become grooved into skills. The approach I outline here attempts to present a functional classification of locomotive speed and agility, and then identify fundamental movement patterns which contribute to effective soccer based speed and agility. These are then placed in a development program leading from the fundamentals to sport specific speed and agility, all based upon sound skill acquisition theories.

A new method of classifying locomotive agility – the target method

This attempts to classify speed and agility based movements according to their sport related function i.e. the target of the movements. Soccer speed and agility can be seen as a serial skill, with the effective combination of a series of discrete movement chunks into a smooth whole. In deconstructing these movements, three types of functions can be identified:

1. Initiation movements
2. Transition movements
3. Actualization movements

Initiation Movements: The target here is to either start or change a movement. To this end they are normally discrete rapid movements with a specific aim of changing movement. A change of movement can be a change in direction, a change in speed or both. The main initiation movements involved in soccer are outlined later.

Transition Movements: These occur as a player is waiting to respond to a stimulus. The main target therefore is to enable the player to maintain a position from where they will be able to read and react rapidly, normally through an initiation movement. The focus of coaching with transition movements is to optimize body position allowing for effective subsequent initiation moves. However, in many programs transition movements are not trained as transition movements and an athlete's body position is often compromised resulting in ineffective read and react responses.
Actualization Movements: These are the often the pay moves and will normally consist of two types of actions, a soccer skill, or a rapid acceleration. The quality of the actualization movement will be largely dependent upon the quality of the transition and initiation movements that precede it.

Utilizing the target approach to enhance learning transfer

This target approach assists in the selection and coaching of appropriate drills for soccer based speed and agility. The greatest transfer of learning between a drill and soccer based performance occurs when the drill replicates the requirements of soccer. By understanding both, the purpose of a particular movement and how it then applies to soccer performance, the coach is able to select drills that best develop the movement patterns they are aiming to enhance. At no time should the performance of a drill become an end in itself, and training should always be geared to enhancing soccer performance rather than performance on a drill. A look at many drills aimed at enhancing soccer agility quickly reveal that they do not replicate the movement patterns of soccer, or that the movement patterns are performed in directions or distances that do not relate to soccer. For example fast feet ladder drills are often carried out in a ladder 12 feet long. A look at soccer reveals that where fast feet or chop steps are employed they are only employed for short distances before another movement pattern, such as an acceleration pattern, takes over. Another problem is that many transition movements are trained as actualization movements e.g. side shuffle movements trained to be as fast as possible with often a breakdown in body position. Again side shuffle movements are normally employed as a player waits to read and react to a stimulus, making optimal body position essential. These are seldom used to get from one point to another as fast as possible. For example, in a game a player would cross-step and accelerate in a normal running gait if the aim was to get to a point as rapidly as possible, rather than side shuffle that distance.

The Fundamental movement patterns for soccer speed and agility

Just as in strength training, where 7 fundamental movement patterns can be identified, a similar approach can be applied to agility. Soccer speed and agility can then be broken down into a number of basic movements patterns, which can be efficiently linked together to form the soccer based movement we see on the pitch. Optimum performance in soccer based agility is then based upon the efficient and effective combination of these movements.

The athletic position

This is the fundamental body position for effective agility. At this point the key joints, ankle, knee and hip are pre stretched and loaded ready for action. By having the feet wider than the knees this allows for lateral movement to be initiated immediately as well as linear and upward movement. The torso is held in a neutral braced position with the head in line with the body and eyes looking forward. Before any agility training is performed the player needs to be able to adopt this position at will, and be aware of the key coaching points associated with it (Figure One).

Once this athletic position has been mastered then the key soccer agility movement can be identified. These can also be divided into the three target classifications highlighted earlier, namely:

1. Initiation movements
2. Transition movements
3. Actualization movements

Initiation movements.

These are the movements that the player will need to either start or change movement. Here four basic movements are identified:

• First step gait, required for effective acceleration in a linear direction
• Cross-step, required for effective acceleration in a lateral direction
• Drop step, required for an effective acceleration in a backward direction
• Cut step required for effective direction change

Transition movements

Here the player is waiting to react to an appropriate stimulus and therefore needs to maintain a position from where they will be able to effectively initiate the required movements, and optimize the subsequent actualization movements. Six basic movement patterns are identified here.

The side shuffle - Movement in a lateral direction waiting for a stimulus
The backpedal - Movement in a backward direction waiting for a stimulus
The track - Movement backwards but with constant movement right and left as if following an attackers moves
The transition gait - Effective and efficient running action, waiting to respond to a stimulus
The chop-step - Rapid foot movement to decelerate the body and place it in a position from where to read react and execute an initiation move.
The bounce - Maintaining a loaded and pre-stretched position while stationary, with rapid bounces on the balls of the feet taking place in preparation for reaction to a stimulus, such as marking from a corner.
Actualization movements

This is where the player will have reacted, initiated movement, and will now be looking for a successful completion of the task. The task may involve making a play such as a tackle, a header or in terms of speed and agility may require getting to the ball rapidly. The two main agility based actualization movements are:

• An acceleration gait
• A maximum speed gait

The relative usage in terms of speed and agility will depend upon the distance to be covered and the initial speed of the player. In any program acceleration needs to be developed from both standing and rolling starts. While actualization movements may be the last part in an agility sequence they may also require subsequent movement and the initiation of a further series of movements e.g. reacting to an opponent and making a tackle (actualization), followed by a pass and a further series of movements to be in a position to receive another pass.

Target Behavior checklists

Target behaviors can be thought of as the key aspects of the movement that need to be present for effective performance of the overall pattern. All of the key fundamental speed and agility movements highlighted have target behaviors associated with them. Once the coach is aware of the key target behaviors, these provide an ideal coaching checklist, against which performance can be compared, and the coach can ensure that each fundamental movement has an associated target behavior checklist. Key areas of focus that can be utilized to form the checklist are useful, and the following provides a system whereby movement can be analyzed up into a number of key behavior areas:

1. Feet placement
2. Leg action
3. Hip action
4. Torso position
5. Head position
6. Arm action

At all times the aim is to hold the torso and head in optimal alignment to allow effective hip, leg and arm action and to ensure that foot placement is optimal to allow for effective force transference, and subsequent motion.

Coaching, Coaching, Coaching

At all times the emphasis should be on movement quality, simply selecting good drills and allowing practice is not sufficient for optimal progress. The aim of each drill needs to be clearly explained to the athlete as does how it relates to performance. In the athlete is clear as to how the drill will transfer to their performance they are more likely to buy in, and focus on the key performance factors. Once the drills are in practice the coach should analyze the athlete’s performance against the target behavior checklists, and provide feedback to ensure that the target behaviors are being achieved. Never should technique be compromised for greater speed, and the maxim go as fast as you can not as fast as you can’t should be emphasized.

The Optimal Performance pyramid

The optimization of skill learning requires that the learning environment takes account of the skills to be learned and the specific requirements of the athlete. To facilitate this the optimal performance pyramid has been developed, with each level corresponding to the three stages of learning namely the cognitive stage, the associative stage and the autonomous stage. This is used to direct the training at different stages of a players development, and optimizes the most efficacious skill learning environment for each level of development. Within this pyramid three levels are identified:

1. The foundation level
2. The development level
3. The performance level

The foundation level

In developing agility players need to first master the fundamentals. The foundation level is used to develop the basic movements and motor patterns upon which speed and agility are based. The mastery of these is fundamental to optimal agility development in later stages. To optimize the effectiveness of basic skill development fundamentals, these are developed individually in non-competitive environments. Feedback is given regularly to the player, and their performance is analyzed against the target behavior checklist for each and every movement. This checklist outlines the key feet, leg, torso arm and head movement and positions required for effective control of the movement. Additionally, each movement has its own development program of drills etc. aimed at effectively teaching and developing mastery of the basic movement pattern.

The development level

In the development level, the basic movements should have been mastered. Here the movements are developed into the combinations required of soccer. For example side shuffle drills will be combined with accelerations in various directions, backpedal
drills will be combined with drop steps and accelerations etc. These combinations are initially developed in closed drills which become increasingly open and sport specific as the stage develops. The drills are optimally delivered via a random and varying delivery optimizing the skill development environment. Additionally, as movement patterns are now grooved, the drills can increasingly utilize a competitive environment.

**The performance level**

In the performance level, the majority of drills are soccer specific, replicating the requirements of the game. Drills need to be highly specific to the distances, directions, speed of movement etc, and to the soccer skills required at each phase. This phase is only optimally effective if the basic movement patterns are grooved, hence the importance of the initial two stages. At this time closed type drills are normally only utilized during warm-ups etc with the aim of continually reinforcing and honing good technique.

**Force generation**

Speed and agility training must never be seen in isolation. The effectiveness of the movements highlighted in this paper will depend, not only on the movement quality, but also on the force generation and the total ground reaction forces. Therefore, strength and power training must be seen as an essential part of any speed and agility development program. The combination of strength and power training, together with the efficient movement patterns developed via the target based agility program, provide for the ideal speed and agility development environment.

More Information Please!
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