



Progression of Teaching the Shot- A Glide

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Abstract

The purpose of this paper is to illustrate the progression of teaching a glide technique in a simplified and effective way. Now a day, the knowledge of technique and implementation of tool to improve technique, teaching stages and the familiarization exercises for the desire technique are quite complicated especially in the developing and under developed countries. This article would be much constructive for better understanding of glide technique. The subjects who are used in this article for the figures whom are not the real throwers but tried to put the drills with the marginal error and detailed description. In order to get National or International champion, he or she should strive more than 10 to 15 years of scientific and systematic training. Such cases physical education plays a vital role in imparting not only health education and promotion but also is the base for all performance sports and games. The education (PE) undergoing primary, elementary and high school are the real stages/ foundation for budding talents. PE teachers in the school are the backbone of the champions. They must educate proper technique (basics) at right time. For these, PE teachers must be strong enough to compete, to acquire current knowledge, to demonstrate a skill, to categorize the people based on the varied talents and to explain all in a precise way. Hoping and wishing that this paper would fulfill the basic requisite for teaching a glide technique especially for PE teachers and this article would be the base for developing and under developing countries in the International arena to produce strongest contestant for European and Western developed countries.

Keywords: Shot, Glide, Scientific and Systematic, PE, Competent.

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Introduction

Throwing heavy objects is one of the oldest forms of competitive sport. In fact, Homer makes mention of rock throwing between soldiers during the siege of Troy (Homer, 1984). In *The Iliad*, Homer documents that throwing stones and rocks were an integral part of Achaean sport. From Homer's use of the term meaning "thrown from the shoulder," Gardiner (1910) suggests that the Achaeans may have been practicing an early form of shot putting. This may be the earliest documentation of a shot put competition. In addition to the Greeks, Quercetani (1964) reports of shot put-like events being practiced in ancient Scotland and Ireland as tests of strength. The invention of the cannon in the 14th century revolutionized the sport of heavy object throwing as the cast iron ball, the precursor to today's shot, became the implement of choice (Quercetani, 1964). In fact, Oxford and Cambridge Universities adopted this type of ball for intercollegiate competitions in the middle of the 19th century (Quercetani, 1964). Shortly after this time, the implement weight and size were standardized and competition rules began appearing for the first time (Encyclopedia of Track & Field, 1986). In the 1904

Olympics, the square platform that was previously used for a surface in shot put competitions was replaced by a circular ring (Quercetani, 1964); and in 1909, a wooden toe-board was added to the front edge of the throwing circle.

When Parry O'Brien, a young University of Southern California athlete, turned the starting position of the shot-put movement 90 degrees, a historical breakthrough in technique occurred in the event. And O'Brien became the first man to break the 60-foot barrier. He competed on four Olympic teams, won two gold medals and one silver medal, and, from 1952 to 1956, had 116 consecutive victories, a record that still stands thirty years later. O'Brien's distance records were progressively broken, climaxing in 1965 when another American, Randy Matson, shattered the 70-foot barrier. "Gliders" continued to push back shot-put distances, culminating with Ulf Timmermann's world record of 75 feet, 8 inches (about 23.06 m) in 1988. Although the spin technique has grown in popularity in recent years, many world-class throwers continue to use the glide. Since the world record for the men's shot, 75 feet, 10-1/4 inches (about 23.12 m), was achieved by a spinner, why do world-class athletes continue to use the glide? The answer lies in two dimensions-simplicity and consistency. The fact is, the glide movement is linear and simple, unlike the rotational style of the spin, which is highly complex. The glide can be used with more consistency because it has

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three phases that are readily achieved; the rotational movement has more opportunities for error. The glide style of shot putting has many outstanding technical throwers since the days of Parry O'Brien started facing the opposite way of the put. The longest throw in an officiated competition is 81 feet, 3 inches (24.77 meters) with a 12 – pound shot (5.4 kilogram) accomplished by Michael Carter - a glider – when he was in high school (Jay Silvester, 2003).

Safety first

Athletic competition has an inherent risk of injury for the competitors, as well as those involved with the competition, including officials, venue personnel, media and spectators. Some injuries are not preventable, while others are. It is almost a certainty that when an injury occurs, litigation will follow. The primary consideration in coaching the throwing events is safety. Before any throwing or training occurs, a discussion of safety for both throwing and weight training is crucial

for all athletes on the team, not just the throwers. The novice throwers tend to have frequent injuries while handling the shot. Even 4 or 5 kg shot is still a fairly heavy, compact metal ball. The important thing to be considering here is that the potential throwers should learn that they can be seriously injured if struck by a thrown shot. The key to avoid injury is awareness.

Throwers must not release the shot when others are in the line of fire. Competitors shouldn't retrieve or walk in the field when others are throwing. Ideally, shots should be retrieved from the field when stationary, and then carried to another thrower or to a storage area. If shots are rolled in from the field, youngsters may reflexively reach down to scoop up the moving shot. But the deceptively heavy shot can easily injure young hands. If shots must be rolled, instruct the young throwers to either wait for the shot to stop before picking it up, or to stop it with the bottom of a raised foot (The throwing officials' manual, USATF , 2007).

Progression of Teaching the Shot- The Glide Stages of Teaching Learning Process

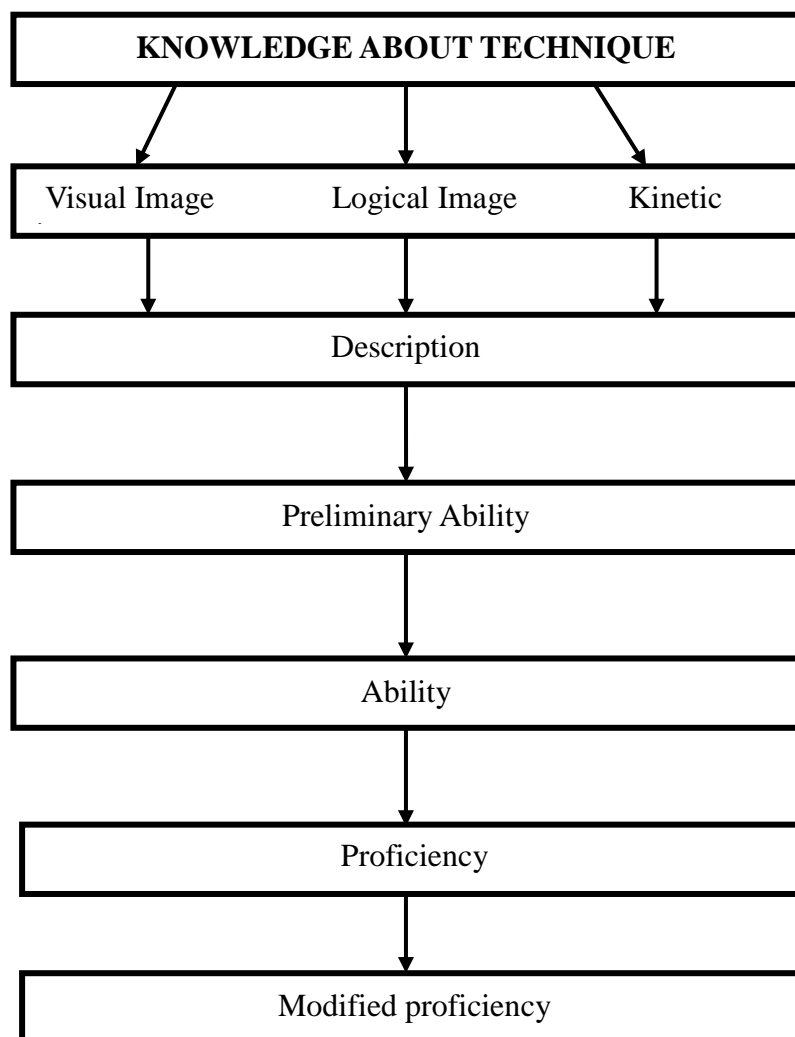


Figure I. The transition of knowledge from the imaginary conception of modified proficiency
(Source: Ants Nurmekivi, Movement awareness and muscular perception in the learning and development of technique)

Image Creation

The teaching of a contemporary technique depends right from the start on the awareness and an interest of the athletes simultaneously. **Bogen (1985)** stresses the importance of the awareness of movement activity, because a movement itself is acquired from this knowledge. The creation of imagery begins from the demonstration of a technique. This can be assisted by viewing videos, films, photos and inspired elite athletes. The visual image from such observations helps to supplement the logical image developed from verbal explanation and the kinetic image that is based on previous movement experiences. This is most important aspects of learning of concept of technique. Now a day, the athlete does imagery skills before they perform in a training and competition. This is the reason why some elite athlete's images of skill/ photographs are displayed in the entrance of stadia, library, dining hall, notice board and where athletes float more (Jayaraman, 2014).

Tihhonov, Papanov (1987) described the technique in to three levels.

1. Description of external picture
2. Description of the movement mechanism from a visual picture
3. Description of the movement mechanisms by muscular perception

Description of the external picture

This described about positioning of the body parts, when and in which position is a leg or arm extended etc. This can be easily achieved by viewing videos and films. E.g. the position of ankle, knee, hip and shoulder at delivery position and also how pivot movement takes place before a release.

Description of the movement mechanism from a visual picture

It should be noted here that actual reasons frequently fail to correspond with external expressions. For example, poor take off affects the distance.

Description of the movement mechanisms by muscular perception.

While this is apparently most important for an athlete, it is not easily accomplished. The coach must in learning draw particular attention to the basic elements required for an effective performance. It is important to distinguish from the basic elements those reflecting a rational action as a whole. It guarantees, above all, an appropriate body position to be followed and maintained by such elements as the position of foot placement, line of ankle to head, and arm position at the time of power position and release.

2. Preliminary Ability

The basic pedagogical and methodical task of this stage is to acquire technical foundations and a general rhythm of the action. This pace is kept slow in order to maintain control over all basic elements

(forward, backward and side throws). At the same time the athlete should attempt to explain himself optimal solution modes for the activity. This is assisted by an imaginary orientation guidance of the technique. Such an imaginary guidance contains mental emphases that help to orientate the thrower's conscious, as well as subconscious, movement activity. Mental perceptions make it easier to distinguish between exertion and relaxation. Therefore, specific throwing exercises are effective training means at this stage.

3. Ability

A rational temporal, spatial and dynamics structure of movement is formed at this stage. The thrower's mind accepts movements more completely and at the same time less in detail. You can apt and introduce complex and dynamic drills of a technique because the thrower is matured enough to understand and demonstrate in a comfort manner. Single movement phases stabilize as corrections take effect. Proprioceptional feedback becomes now increasingly more important. Essential at this stage is to learn the execution of the correct action as a whole (full), proceeding from its dynamic structure (standing throw to full technique). However, attention should still be paid to the single basic elements and phases of the technique. If the action in some basic elements is correct, it becomes automatic and no conscious control is necessary. This allows tackling new elements in the aim to improve movement ability. The thrower not only apprehends the quality of the activity and learns to correct it, but also endeavors to deviate as little as possible from optimal parameters. It is essential for the athlete to be aware of and regulate the level of exertion because conditions change regularly in the real activity. This can be best developed by using various implement and contrasting situation, such as lighter, standard, heavy implements and a variety of contrasting tempo perceptions.

4. Proficiency

This stage aims to achieve:

1. An optimal freedom and economy of movements.
2. A reduction in energy expenditure.
3. An automation of movements.

The control of movements now takes place more under subconscious control and becomes automatic and stabilized. It is essential that the technical preparation is associated with the development of physical capacities, as well as tactical and psychological preparations. Keep in mind that it is possible to achieve complete proficiency only with specific activities. This means for a thrower using the standard implement with the entire technique. A change of an already established skill begins with the separation of faulty elements to bring them under conscious control. The creation of a successful relearning procedure requires that the athlete knows and after this apprehends the differences between correct and incorrect movement variations. An exercise sequence in which incorrect and correct variations are

alternated until the correct variation predominates, leads to a new proficiency.

5. Modified Proficiency

Torim (1987) stated that a modified, flexible and movable proficiency is developed through the creation of supplementary coordinative connections. A complex perception, the so called “track sense”, is developed at this stage. This means an all-round apprehension of throwing technique. To the most basic apprehension of muscular perception are added the sensations of the foot placement, balance, rhythm, accelerate from back of the ring to stop board and sight etc. This feel of doing the whole sequence in training and competitions should be memorized and not allowed to fade. A thrower with a good perception of throwing has several advantages in being able to adjust this technique better and faster in different conditions.

Progression of teaching the shot

Teaching stages are the most important for teaching an event or technique. Because it gives clear idea or picture about the particular skill or technique. This is the ideal tool for teaching and learning processes for both coaches and athletes.

1. Teaching stages must be clear in form.
2. It should have limited steps or stages.
3. Too many steps or stages which may confuse the subjects.
4. Obligation to maintain the sequences.
5. Must Consists of less theory, more practical explanations.

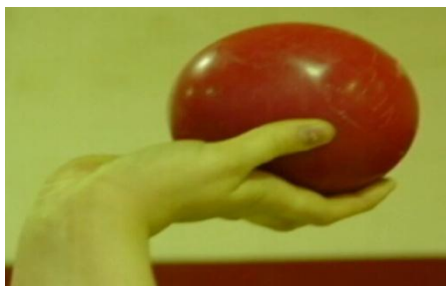


Figure II. Grip (Posterior view)



Figure II. A (Interior view) (Source: Wikipedia)

Note: The spread of the fingers will vary with the size and strength of the athlete. Too wide a spread of the three fingers will lead to injury to the hand. If the fingers are not spread it will make it difficult for the thrower to control the implement.

Carry

Objective: Proper placement of shot against the neck

6. The formation of athletes in a class is very important because a coach must have a vision of all the athletes while performing a skill or technique.
7. 360 degree observation is required and it is must for a coach to monitor each and every athlete in all the directions/ angles.
8. As a minimum 270 degree observation is required for all the throwing events because its highly technical oriented.
9. Technical corrections and rectifications could be done on throws a coach must have strong base of observation and memory power.
10. Don't insist on minor mistakes but at the same time least mistakes and most error rectification are very vital in throwing events especially novice (Jayaraman, 2014).

Grip

Objective: Proper placement of shot or holding the shot

Description:

1. The shot is placed at the base of the fingers (root) not the palm.
2. The fingers are slightly spread apart and thumb for just sustain the shot.
3. Gliders generally tuck the ball under the chin, forward of the point of the jaw below the ear.
4. The hand will be bends back in the cocked position when holding the shot.
5. Its look like you are carrying a pizza.
6. It seems to be shot is rest at the palm not hold (firm not rigid).

Description:

1. The shot is placed under the chin and against the neck, above the clavicle.
2. The hand is “behind” the shot, not underneath it and palm facing throwing direction.
3. Keep your elbow parallel to the ground.
4. Don't squeeze the elbow towards your back.
5. Make sure that you should not catch (rigid) the shot ever.

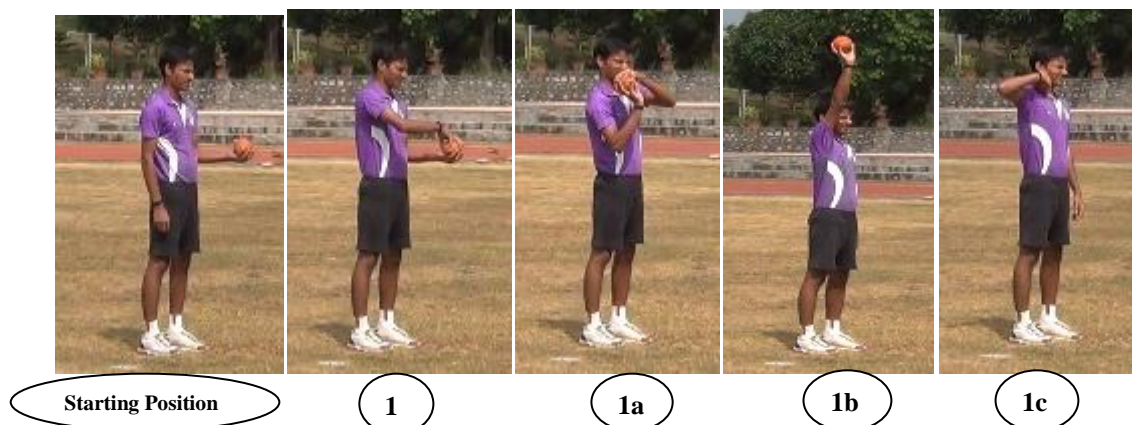


Figure III. Carry the shot

Step 1. Wrist Flip

Objective: Use this drill for proper release of the shot and make use of throwing arm.

Description:

1. Facing throwing direction with parallel stance.
2. Non throwing arm (left arm) is kept at the shoulder level perpendicular to the ground.

3. The shot is placed under the chin and against the neck, above the clavicle.
4. The thrower will flip the shot from his hand (right) without disturbing the non throwing arm (left arm).
5. Make sure that there should not be any movement except the throwing arm.



Figure IV. Wrist flip (lateral view)

Step 2. Wrist flip variations

- a) Wrist flip Upper body twist with count
 1. Starting position: Same as the previous exercise. Keep the non throwing arm at shoulder level and hold it perpendicular to the ground.
 2. **Count 1:** Twist the throwing shoulder towards your right side with proper alignment of shot. The shot should not move up and down.

3. **Count 2:** Come to your original position and put the shot without disturbing and abrupt stop of non throwing arm (left arm).

Note: Make sure that no movements from your legs and hips while putting. Keep erect of the entire body and eyes are at straight.

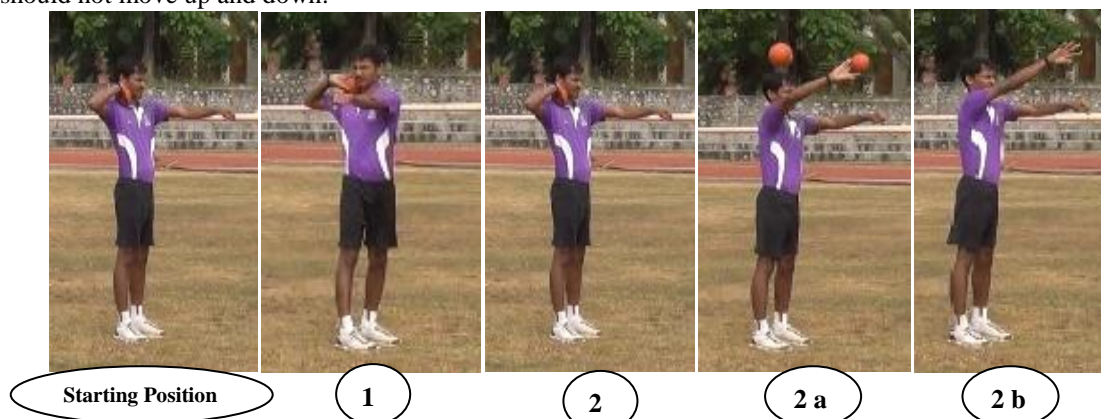


Figure V. Wrist flip variations (with count)**b) Wrist flip upper body twist without count**

Perform same as the previous exercise without count.



Starting Position

1

1a

Figure VI. Wrist flip variations (without count)**Step 3. Twist drill**

Objectives: Purpose of the drill to abrupt stop of non throwing arm and to increase the bus.

Description:

1. Use this drill for warm up and to emphasize the importance of the legs.



Starting Position

1

2

3

3a

Figure VII. Twist drill**Step 4. Delivery stance with count**

Objective: It transforms a maximum of kinetic energy (velocity) to the shot by an optimal movement direction inside the circle.

Description:

This is the most important phase for all the throws. $\frac{3}{4}$ of the throws depend on how the thrower takes position at power position/ delivery stance.

Count 1: Facing 180 degree direction and make parallel stance. Take your right leg back for comfortable distance for heel, toe relation by keeping the left leg (Knee) straight. Make sure that heel; toe relation is vital in this phase.

Note: The line of left toe and right heel must be in a line. The proper feet alignment for the power position of the

2. The athlete faces the sector with toes pointed straight. Place the shot against your neck.

Count 1: Bend the knees, twist the body to the right and bend down.

Count 2: Come back to starting position

Count 3: Extend legs and hips sequentially and then put the shot. Throw is explained from the bent knee drill. Make sure of the outward movement of throwing wrist.

shot is a Toe-Heel or Toe-Instep Position (**Gary Aldrich, M-F Athletic Company**).

Count 2: At this position, shift your body weight to your right leg and come up on your toes. Keep it in mind that left leg is placed just for support.

Count 3: Keep your both arms on the shoulder joint and turns the upper body on your right side with forward leaning of facing 10- 15 meters back of non throwing direction. Make sure of no strain at the neck region.

Count 4: Make sure that the positions of ankle, hip, knee, shoulder and head must be in a single line. Lift your elbow ahead (non throwing- left) and must be parallel to the floor. There should not be any sort of tension in your neck and rest of your body except right toe.

Count 5: Now, lift the throwing arm with shot and push it towards neck.

Count 6: Bring the non throwing arm that is left arm for right arm thrower ahead of chest and make square shape in front of chest.

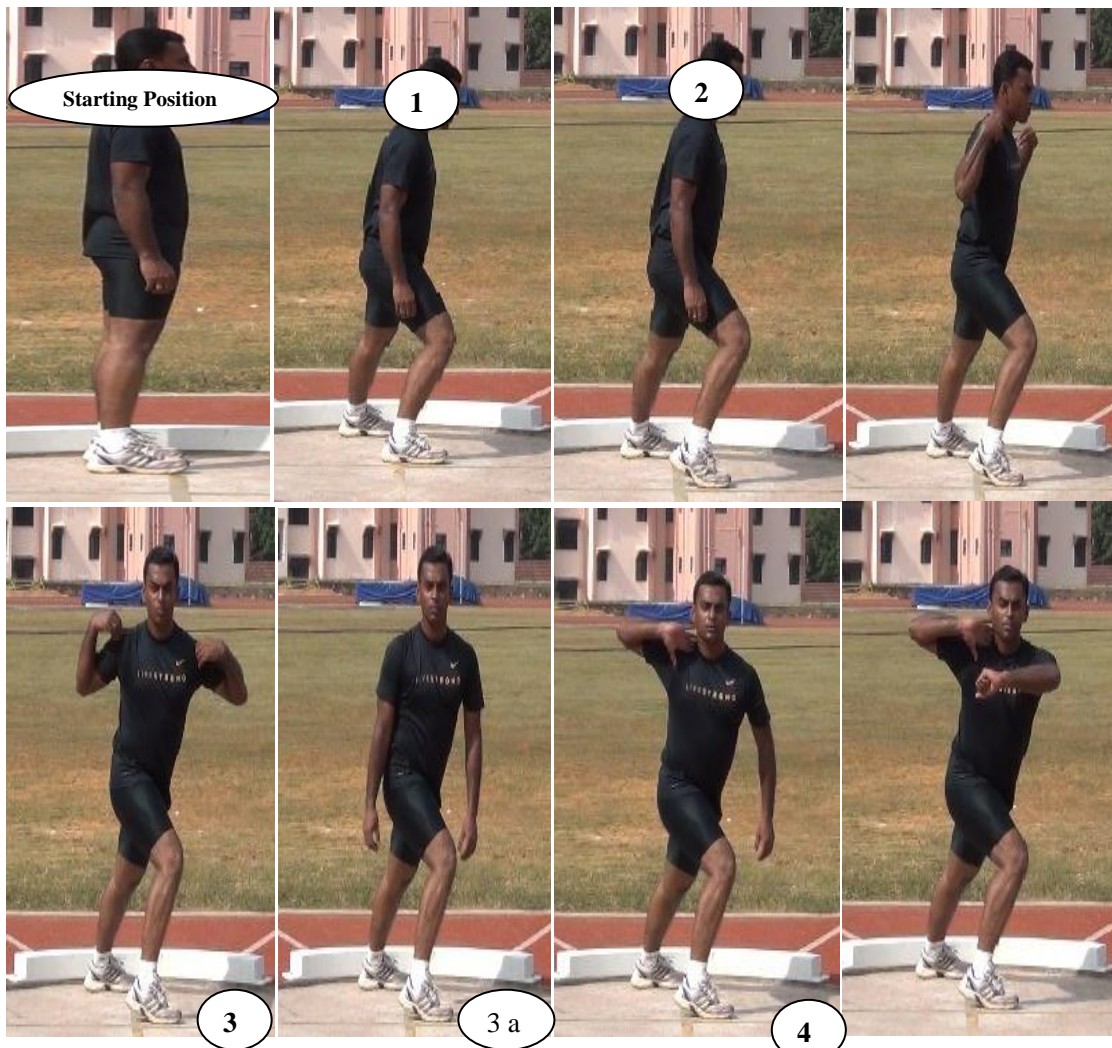
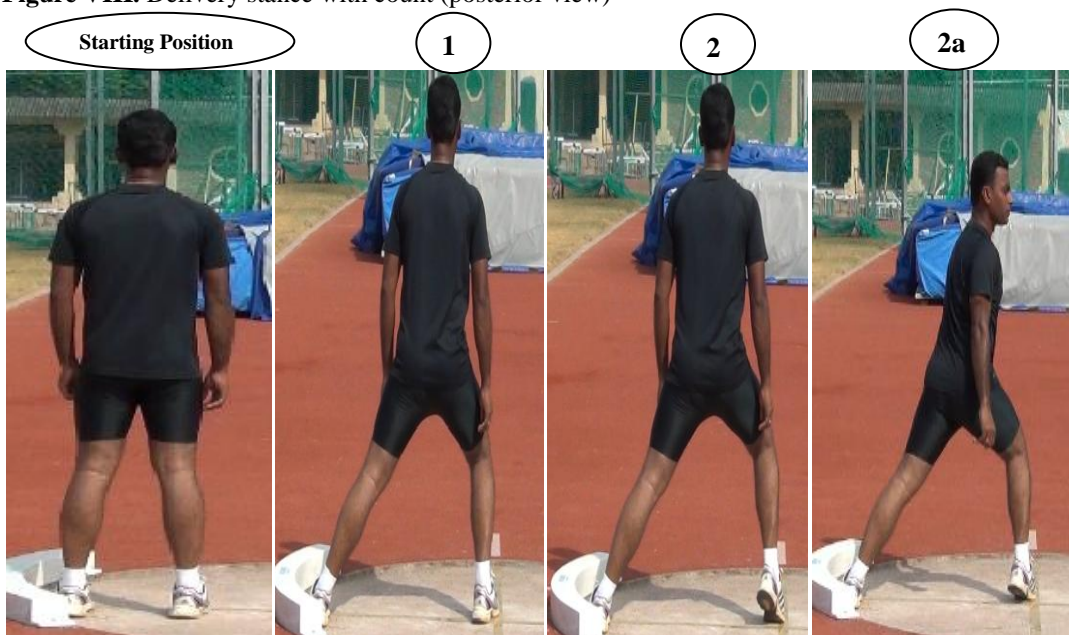


Figure VIII. Delivery stance with count (posterior view)



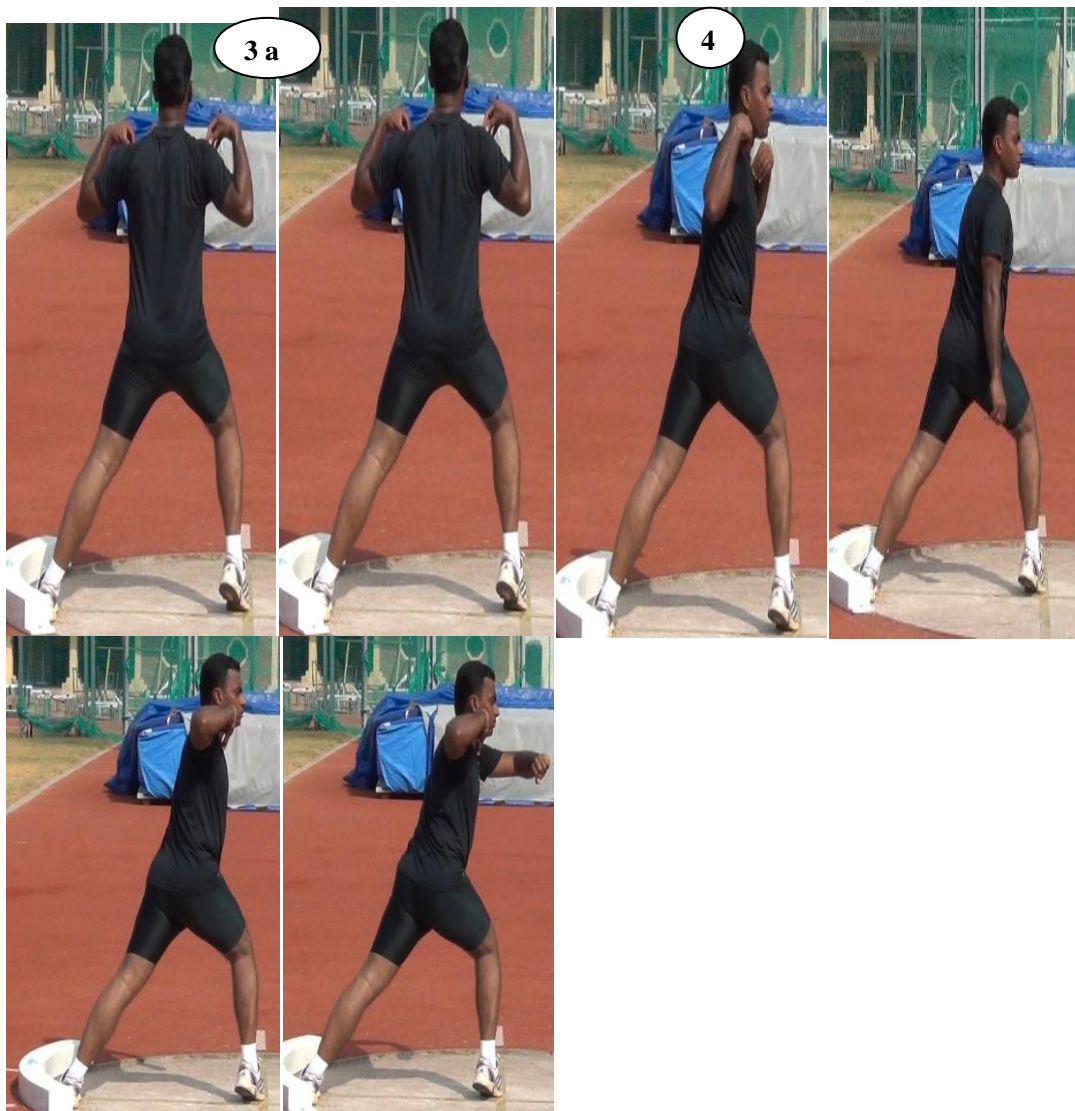


Figure IX. Delivery stance with count (Lateral view)

Step 4 (i)

Delivery stance with shot

Objective: It transforms a maximum of kinetic energy (velocity) to the shot by an optimal movement direction inside the circle.

Description:

Facing 180 degree direction with shot. Come to delivery stance or power position by keeping left toe and right heel in one line. Make sure that throwing elbow should not fall at any cost. Follow the same instructions as previous.



Figure X. Delivery stance with shot

Step 5. Delivery stance and throw without shot

Objective: It transforms a maximum of kinetic energy (velocity) to the shot by an optimal movement direction inside the circle.

Description:

Stand 90 degrees to the right of the throwing direction with the shot and place against the neck and non

throwing arm extended.

Count 1: Turn the right foot (toe) inward which will cause the right hip to face towards the throwing direction without opening of non throwing arm (left).

Count 2: Follows by hip thrust

Count 3: Put the shot with outward movement of the wrist.



Figure XI. Delivery and throw without shot

Step 6. Delivery stance and throw with shot

Stand in delivery stance or power position with shot. Now, turn your right toe, till it faces the throwing direction by keeping weight on your right toe. Throwing

arm should not open and maintain a good torque. Do hip thrust and bring your right leg front and put the shot.



Figure XII. Delivery and throw with shot

Step 7. Hip fall and come to delivery stance without shot

Objective: To improve the glide and efficiency of right leg strength

Description:

Perform the hip fall exercise with shot. This exercise is to develop glide technique.

Count 1: Thrower stands at the rear end of ring, facing non throwing direction by keeping the left leg slightly front at Dorsi flexion.

Count 2: Gradually thrower bring and shift his body weight from dorsi leg (left) to butt And then perform glide when you about to lean or fall back.

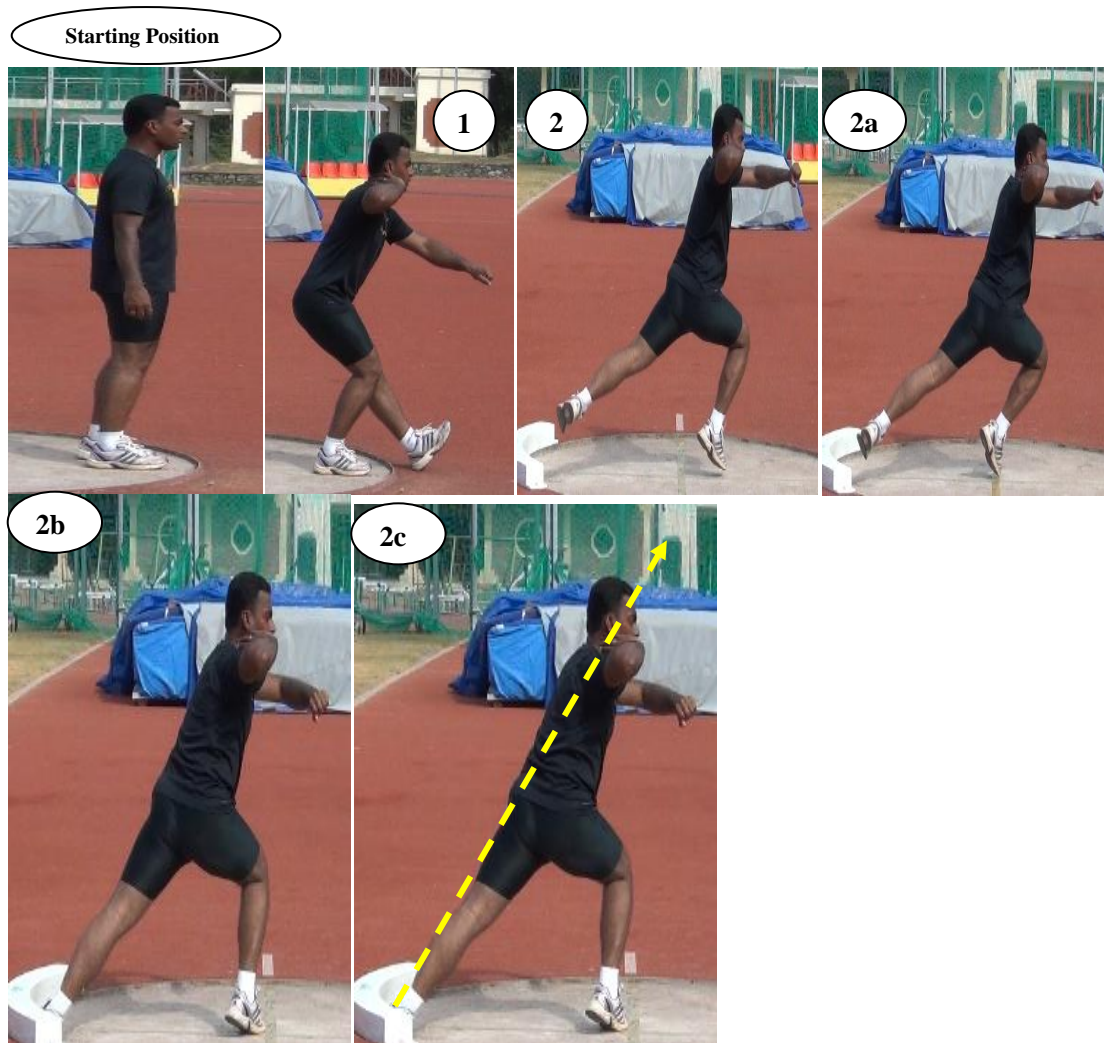


Figure XIII. Hip fall and power position

Step 8: Hip fall and throw without shot

Objective: To improve the glide technique, efficiency of right leg strength and transit the movements from lower body to throwing arm.

Description:

1. Perform the same exercise as previous.
2. The point to keep in mind here is that pivoting the right leg until it faces throwing direction.
3. Do hip thrust
4. Bring the right leg (toe) front without opening the throwing and non throwing arm and then throw.
5. Make sure that entire body weight is on your right leg till you complete the pivoting movement.
6. Pushing hard with outstretched hand release with acute angle.



Figure XIV. Hip fall, power position, throw

Step 9: Hip fall and throw with shot

1. Perform the same exercise as previous and put the shot here.
2. The point to keep in mind here is that pivoting the right leg until it faces throwing direction.

3. Do hip thrust

4. Bring the right leg (toe) front without opening the throwing and non throwing arm and then throw.

Note: Heel, toe relations are most important in delivery stance. Maintain a good torque (hip to shoulder).



Figure XV. Hip fall, Power position, throw (with shot)

Step 10. Glide technique with count (without shot)

Objective: To familiarize the glide technique.

Description:

This is the last and final step of learning the full technique of glide.

Feet apart and facing non throwing direction

Count 1: Hold the shot at chin. Simultaneously lift or raise the non throwing arm and bring back the left leg slightly.

Count 2: Lower the centre of mass by flexing the right

knee and bring the non throwing arm down. Make a straight line between hip and shoulder.

Count 3: Partially extend or stretch the left leg back to the centre of ring.

Count 4: Now, bring the left leg closer to right knee without disturbing rest of body parts.

Count 5: Try to shift your body weight to your butt and do the glide when you about to fall back and come to delivery stance or position and maintain it for a while.



Figure XVI. Glide Technique (without shot)

Step 11. Glide technique without count (without shot)

Perform the same as previous without shot.

Step 12. Full Technique and throw

Objective: To familiarize the glide technique with shot in a slow manner. Once the athlete learnt or master on it, focuses the quality of a technique and then throws.

Description:

Lay emphasis on the technique and not the distance. Do follow the same instructions as previous. But perform here throw without shot. Feet apart and facing non

throwing direction

Count 1: Hold the shot at chin. Simultaneously lift or raise the non throwing arm and bring back the left leg slightly.

Count 2: Lower the centre of mass by flexing of right knee and bring the non throwing arm down. Make a straight line between hip and shoulder.

Count 3: Partially extend or stretch the left leg back to the centre of ring.

Count 4: Now, bring the left leg closer to right knee without disturbing rest of body

Count 5: Try to shift your body weight to your butt and do the glide when you about to fall back and come to delivery stance or position.

Count 6: put the shot hardly with outstretched throwing arm with flipping action of wrist.

Note: Pivot the right leg inversely until it faces throwing direction. Do hip thrust with help of right leg without opening the throwing arm and non throwing arm. Keep it in mind that non throwing arm is kept locked till you release the shot.

Starting Position

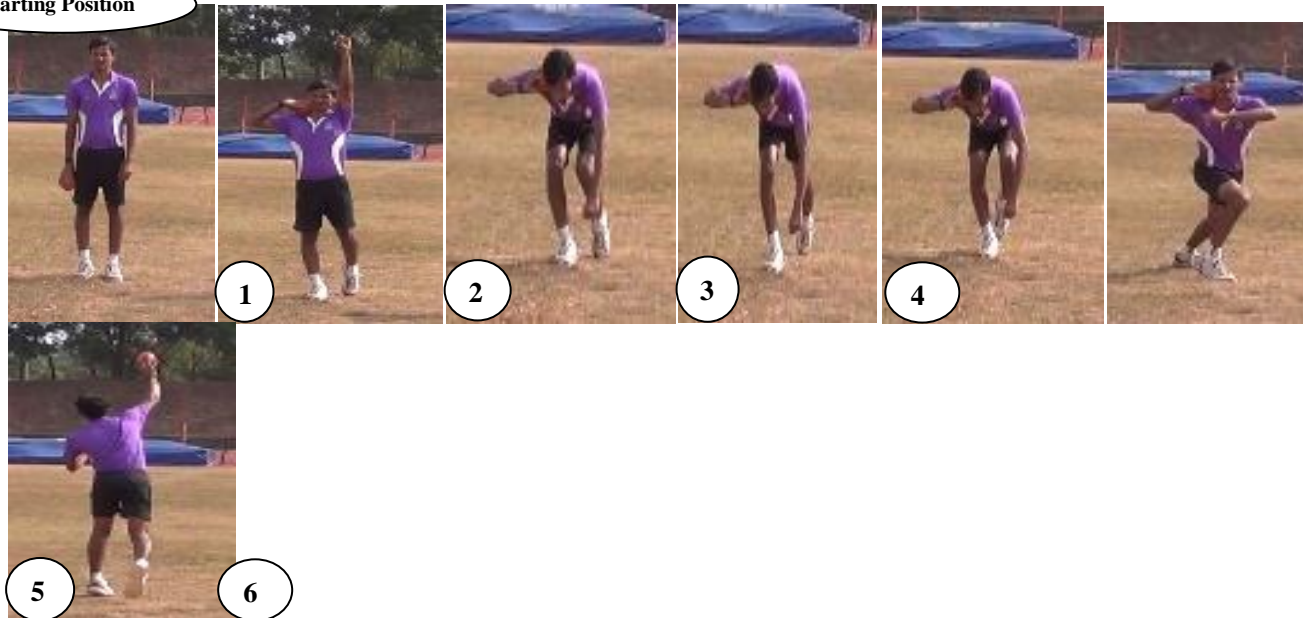


Figure XVII. Glide Technique (Posterior view)

Points to Remember

1. Make sure that Heel toe relations are very vital.
2. Keep the left arm relaxed at the commencement of the throw.
3. The back is kept as straight as possible up until the final delivery action.
4. The hips should face the direction of the throw at the completion of delivery.
5. The shoulder must never be in front of the hips during the throw as this will cause early release and loss of distance.
6. The shoulders should be level at the time of delivery. This will avoid dropping the left shoulder.
7. The elbow should be behind the shot during the delivery.
8. With the "shift" all movement must be one continuous action and is to be executed with maximum speed.
9. The action of the put is initiated by the right leg and hips, followed by the shoulders and finally the arms.
10. In the "shift" the body must be kept low until the left foot has landed at the front of the circle. This will ensure that the right knee remains "bent" to provide the drive for the delivery action. (Basic Coaching Manual)

Conclusion

Teaching the highly technical oriented event is not complicated. It's an issue of how a coach could handle, how he explains, how he motivates and develops

the interest of the athlete. Perceptibly, throwers nature interests are most imperative while acquiring the course of action. Most importantly, teaching an individual or a group it has its own nature of learning processes and implications. Most importantly, coach must focus on the synchronization, sequence, consistent and transparency of the technique in which the thrower adopts and applies on it. Let the throwers have a rehearsal of technique by showing the images, videos, picture and etc. Instead of vague explanation and demonstration.

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