

A holistic and simple approach to coaching the Long Jump

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*Coach the long jumper, not just the long jump.

*Combination of good mechanics and understanding the value of the intangibles also.

*Kiss

*The proof is in the pudding.

*Athlete is the one who does it. Coach is not a “potter”.

*People are all alike—just as true—people are all different.

*My jumpers

*Approach concept—This is a speed event.

*Takeoff concept—running through, not to the board and the proper synchronization of the last 2-3 steps is critical

*Landing concept—result of proper takeoff

*I am “all about” the approach and the takeoff!

*Training

*Philosophy of the jump

I have always thought that coaching was both a science and an art. Proper coaching combines these two factors. People often ask me what I coach, and they are referring to what event or event area. My reply to the question of what I coach has always been – “people”. One of my former athletes introduced me once at a clinic by saying that while other people coached the mile Coach Walker coached the miler. To me that was one of the highest compliments that he could have given me. I honestly believe that you coach both the event and the entire person if you are to be completely successful. Because of that I have used many of the same concepts and workouts since I started with Larry Myricks in the 1970's up to now with Brittney Reese, but there have always been differences in how I approached the teaching and coaching of each athlete. My measurement is at the long jump pit, not in some theoretical setting, and I have to teach—and reach—people, not machines. What I am covering in this presentation is what I do and what has produced for me with my athletes.

I feel like there are certain physiological and biomechanical principles that cannot be over looked and must be achieved if a long jumper is to succeed. I am equally convinced that often the difference in success and failure, particularly as you move up the competition ladder, lies within the individual in what we call intangibles. I try as much as possible to work on improving all the traits that an individual has that lead to competitive success. Sometimes you can become too technique and mechanics oriented and become like the centipede who when asked which leg went first became so confused it couldn't move. I want an excited ‘natural’ athlete running fast and jumping far similar to what I feel the Zen philosophy teaches about being in the moment and allowing the action to flow without the mind interfering.

That leads to my next coaching guideline that I try never to forget. Great teaching is taking the complex and making it simple, not the other way around. I follow the K.I.S.S. principle of coaching. Keep it simple, stupid! This also fits in well with the scientific principle. For a scientific experiment to be valid, the variables must be kept to a minimum so that you will know what actually produced the result.

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I am pragmatic in my approach to coaching. I have a concept in my mind of what I am trying to “see” with each workout, a model in my mind of what I am trying to “see” from a good jump, and I only care about what stimulus evokes that envisioned response. I do not care what coaching cue is used or whether it is totally correct as long as it evokes the response I am looking for. I try to use a variety of statements to elicit the result I am looking for. I do not coach for what it appears to others; I coach for the result. In my part of the country we say the proof is in the pudding. That means if it tastes good, the recipe was good. If it tastes bad we don't care where you got the recipe.

I also feel like the coach gives direction, but the athlete must provide the excellence. We are not potters molding clay. We are more like someone at an archeological site that is getting rid of everything that is not valuable. Sometimes we cut, slash, and dig to get closer to the valuable treasure we are looking for. And, at other times, we use brushes and are very tender with our approach to discovery. Like the archeologist, however as we get rid of all the vines, the dirt, the trash that has covered up the valuable, we do not put anything there that is not already there.

Once we have cleared away all that is not part of the valuable find, what is there can either be something that is a relic, or we could discover it is only a trinket. Like the archeologist, the coach can show the world what is there, but we don't put anything there that was not there in the first place. As a coach we only expose the champion to the world if indeed there is one in there. The athlete is the Champion. Coaches just help get rid of everything that covers that up and help others see what maybe we envisioned earlier in their careers.

I have also been guided by a concept that appears to be a contradiction. People are all alike; people are all different. Add to that the fact that within each individual is also a contradiction in that sometimes we are hard workers and sometimes we are lazy. Sometimes we think of others and sometimes we are selfish. A coach must understand that all of these factors affect how successful an individual will become as a jumper.

As verification that what we are doing “works” and has worked with a variety of people in a variety of settings over a 39 year period can be seen from a look at where people were when they came into our program and where they were when they left. The longest jumps from athletes that I have coached coming out of high school is 20'8" for a woman and 24'1" for a man. The majority of my females have been 19' or less and majority of men have come to me with PR's of 23'6" or less. I have coached in the US collegiate system and have only coached 'my' athletes in post collegian status. I have been fortunate to coach 3 jumpers who exceeded 27 feet. Larry Myricks came out of high school with a 23'6" PR and jumped 27'11.5" as a senior. That was, at the time, the longest sea level jump ever. Ralph Spry came from junior college at 25'7" and in two years went 27'5.5". Savante' Stringfellow had a high school PR of 23'1" and he jumped 27'9.25" for me as a senior. I have 3 additional jumpers that have gone over 26 feet. I have had 12 men jumpers that were high 22's in high school that have jumped over 25' and one of those when 26'. My approach is certainly not the only way, but it is a proven way to help a jumper see significant improvement* a look at the event and how we “see” it--

APPROACH

1. Speed is the single most dominant factor in a maximum long jump. I do everything I can to improve the speed and running mechanics of my jumpers. I not only practice speed, I enter them in sprint events during the season. I feel there is a training effect that comes from a race that cannot be duplicated in practice. For some reason, success in the 200 seems to be more of a predictor of long jump speed readiness than the 100. Possibly it relates to the ability to run smoothly and close to maximum, but not all out. Tom Tellez, the coach of the great Carl Lewis was the first to remind us that the faster a jumper is going the higher will be his center of mass. Statistics show that when more speed is produced at the same take off angle the center of mass will go 2' vertically at 80%, will go 2'7" at 90%, and 3'4" vertically at 100% speed. From these statistics it is easy to see that more speed can produce more height, even if the take off angle is less.
2. As we train for speed we should continually emphasize that a person reaches full speed after a maximum acceleration of 6 seconds. This means that most people reach full speed by 50-60 meters. In long jumping we want something close to 90% speed, which would take about 135 ft. for men and around 118 ft. for women. That is why we want 120-140 run up for men and between 105-120 for women. Most of my male jumpers have been between 120 and 130 but some of my elite jumpers have been between 150-170' and could effectively utilize the extra speed gained at the board as they matured later in their careers. Current rules limit how far back you can be and for all of my jumpers when they were in college we would take either 9 or 10 takeoff steps in our run. Most of my current male jumpers are in the 120-130 run up range. My females are between 110-118 depending on how long they have been training and what speed they can handle.

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3. The key to the approach (besides accuracy) is to learn to reach a controlled 90% and maintain instead of continuing to accelerate. Once a jumper reaches maximum speed he must learn to simply maintain that rhythm and leg/arm turnover. Body position needs to be erect at the plant. In my observation the separation of the good jumpers and the great jumpers is in the way the great jumpers do not slow down in the last 4 strides and aggressively run through and off the board. I like to remind them not to "freeze" on the penultimate step, but rather to run off it. Sometimes I even say push onto the takeoff leg. The approach and jump is through the board; not 'to' the board. Do not prepare to take off until the last 2 steps

4. We do some of our approach work away from the jump area. We start off a freshman at 120' for men and 110' for women and gradually work for a longer run as they learn to handle the extra speed. We also count 9 or 10 strides and see where that is also. An example of our approach practice would be to run 10 x 120'/110' in a lane on the track. We would mark each one and time each for consistency of effort, as well as accuracy. We mark the first step, also. We time the run from the contact on the track of the first step and the contact of the takeoff foot in the 120'/110' area. As a coach I watch the athletes last 4 strides and look for signs of readiness as opposed to a complete run through, but I have never believed in a lot of check marks. I want a controlled reckless abandon. Through practice an accurate approach can be learned and my outstanding jumpers throughout the years have not had runway problems. On the other hand, if an athlete has real trouble with my method, we then go to the count method. The athlete simply counts the takeoff foot every time it touches the track and jump on the proper number. We also have them practice running a proper acceleration pattern that I bought from Vince Anderson who is now at Texas A&M. It teaches the proper "feeling" of a proper acceleration. We only do those two things if there is a problem. I prefer to use only 1 checkmark, but now I do add a 'coaches' mark for many of my current athletes to help us determine where changes in the run are occurring. We mark our takeoff and first step and I 'use' someone else's mid mark that is the same as my jumper's mid mark to gauge how they came out of the back of the run in competition. More mistakes are made by either over striding or under striding on the first step than throughout the entire run. I want the first step to be the same every time. I also time the run. I start the watch when the first step makes contact with the runway and stop it when the athlete hits the board (or takeoff spot). This timing, along with my visual perception, helps me see if they are consistent in their runs. In practice approaches, I often put a mark at 1.8 meters, 2.0 meters, and 2.2 meters from the board which the penultimate step should hit as a visual aid for me as the coach.

TAKE OFF

1. As a general rule, I think of the next to last step and the last step as part of the takeoff. As we hinted earlier, the athlete must be able to translate the speed into a proper position on the board and through the takeoff. There should be a slight lowering of the center of gravity, and therefore a small preparation to jump on the next to last stride. Tom Tellez, the great coach of Carl Lewis recommended the last two steps be flat footed. I have two coaching cues I have used. The first and simplest is to tell the athlete to shorten the last step and plant the foot directly under the belly button. (Actually I want a plant between 6" and a foot in front of the center of gravity) This means that on most jumpers the next to last stride will be a little longer than the last stride. As is often the case with track theory, this is not always true as evidenced by the great leap made by Bob Beaman where he has a short next to last step and a longer last step. Tisha Parker, who held the SEC record in the long jump at 6.63 used the short long method of Beamon, but Brittney Reese, Savante Stringfellow, Ralph Spry, and Larry Myricks used the long/short method. As long as I see the correct action I don't care which of these methods are used. At the plant the foot hits flat and explodes. The free leg and opposite arm drive up and out. The faster this action is the more force is applied. As the arm and leg decelerate their momentum is transferred to the body; the shorter the time on the board, the better.

2. I consider the takeoff position to be "almost" equal in importance to speed as a factor in long jumps. I consider the takeoff to be more than the last step and jump. I look closely at the last three steps as well as the body position and the angle at which the athlete leaves the ground. While speed is critical so is the body position the proper coordination of the levers during the takeoff. Research that I have seen shows that sometimes the best jump is not always the one with the fastest velocity at the board, which tells me to be aware of body position and the need for the athlete to be strong enough to lift off at a fast speed. Synchronicity of all the body parts into the takeoff position and through it is what has to happen for a great jump and one reason that although the long jump looks simple it is a complex event, particularly in regard to the coordination of speed, proper penultimate, and synchronized body parts off the board. Research showed in the PV that an increase or a decrease in the final speed was more likely to produce a miss than consistent speed during the takeoff speed. I know of no research in this area for the long jump, but the general idea is the same. Carry 90% of your speed through the board with balance and proper body position for a maximum jump. The jumper must be strong enough and coordinated enough to effectively use the speed. I look to see if the jumper has run "through" the board, NOT "to" the board. I also want the athletes to really move off of the penultimate foot onto the jump foot as forcibly and fast as possible. If I am not getting what I am looking for I sometimes tell them to push onto the takeoff foot. This action really allows the free leg to

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come through quickly and powerfully and is what I really want to see. Bob Beamon's lead knee or drive knee was twice as fast on his record jump as it was on the previous jump.

3. As the coach I watch the run paying particular attention to the hips/center of mass. I want the rhythmic set up for the jump in the last three strides, but I do not want the hips/center of mass to slow down. Often when the time is slower than expected on the run, I emphasize the drive phase out of the back as opposed to telling them to speed up.

IN AIR TECHNIQUE

1. Once airborne, the jumper wants to retard forward rotation and prepare for an efficient landing. The arm/leg rotation only delays the forward rotation. As the jumper stops the hitch kick or hang, the rotation returns and his entire body rotates forward into the pit. Style in the air is not that important. There have been great jumps with a variety of styles. It is important to hit the right takeoff angle and then to forestall the natural rotation in the air as long as possible. Savante has long levers and used the hang style to great effect. Reese uses the hang style. Ralph Spry and Larry Myricks did wonderful jobs of using the hitch-kick or running in the air style. The key thing I want is the great knee drive and tall takeoff position from the board. Once the jumper reaches the top of the flight pattern I want them to be "long" to delay the forward rotation. Arms high above head and legs down. Like in sky diving long leavers slow rotation and short leavers speed it up. It is amazing that in my experience, each time we think about style and landing, the athlete does not have the correct takeoff. On the other hand, when they hit the board with the speed and position I am looking for they always have a good, effective landing. That is why I constantly harp on the run up and the takeoff.

LANDING

1. The best landing is a position where the feet land ahead of the specific area that the center of mass would have landed according to its parabolic flight pattern. It is also important that as the jumper achieves this position, he does not sit back into the pit. I still prefer and teach the traditional landing where the feet hit first and the butt does not touch but simply slides over the feet imprints. I have seen a lot of jumpers that hit and slide, but anytime any one of the many jumpers I have had for 39 years tried that they would not emphasize the takeoff position. It seems that they were preparing to land before they jumped. And, as I have said, my emphasis is on the approach and the takeoff. Hollis Conway said that the approach is 90% of the high jump, and I feel the same about the long jump. Every time one of my jumpers has gotten the approach and takeoff correct, the landing has been good. In field events usually what you see was caused by something "before" it in the attempt.
2. In the hang style, once the jumper has achieved the long position, he must then curl the legs tight to the butt and pull through from the hip flexors or knee, but not by extending the feet at this point. The knees curl in front of the stomach and chest. Holding the legs up is not a musculature problem. In free flight all parts of the body fall at the same rate. (In a leg lift the athlete is attached – in a long jump he is in free flight). The forward rotation causes the legs to appear to drop. They are actually in the same position, but the whole body is rotating forward.
3. As the athlete reaches the end of the hang or hitch-kick, he should drive the arms down and past the hips. The movement of the arms behind the hips changes the relation of the body to the center of mass. (Remember: the center of mass has a predetermined path). The arms going back actually shifts the feet out and up. After we have come out of the elongated part of the jump – at the top of the jump parabola, we then bring the heels tight under the butt and "lift" the knees (still tight) and then try to get our nose to our knees. As the arms come back through and the nose stays out the butt will miss the landing of the feet. The long jump is an event in which the athlete must convert horizontal speed into vertical lift. Because of the laws of physics, he cannot change the flight pattern of the center of gravity after lift-off. However, through the rotations in the air, the athlete can overcome forward rotation and affect the landing and, consequently, the measurement of the jump.
4. As the feet break ground the arms should be driven forward to aid in clearing the landing spot made by the feet with the rear-end. The three key ingredients in training for the long jump are, therefore, speed, lift, and technique in the air.

TRAINING

In our training guidelines for all events we are constantly aware of the proper use of stress on the body. We favor a gradually progressive training program over several years. This requires an open line of communication between the coach and athlete. The athletes must be able to ready their bodies and give the coaches the necessary feedback on how they are feeling. We progress from

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dictator to partner as the athlete learns more and more about his event and his own body. Regardless of the goals and expectations involved the coach must start the training at the level the athlete is in currently and progressively move in the direction of the goals, but I do not believe there are any legal shortcuts. It takes what I call "aggressive patience" Early in the year we spend a lot of personal time talking and becoming better acquainted with our athletes. I strongly believe you must know them as people before you can properly coach them as athletes.

Our training philosophy has remained much the same for all of our best jumpers, but a coach should always realize that individuality is more than a phrase. Using a similar approach I've coached those who were sprinter-jumpers and those who were mainly long and triple jumpers and of course those two groups are trained somewhat differently.

I strongly believe in starting the training year very easily and gradually adding more and more stress. Then we taper and emphasize speed and rest during the championship cycle. We are pragmatic and we try as early in the athletes' career as possible to find out what works for him or her.

Speed is a critical training factor. Back in the "old days" when I coached Larry Myricks for his collegiate career, we used the period of March and April to allow him to be a valuable to the team as possible. This meant a de-emphasis on actual long jump performance and an emphasis on sprint performances. This way Larry was able to be our most valuable team member and at the same time use the heavy volume of races for speed training. After the "team" season, he would emphasize technique and rest. At this point the great leaps would come...and they did as he jumped what was then the longest sea level jump in history at the 1979 World Cup (his senior year as a collegian - 27'11.5").

I really stress conditioning in the fall. I think much of this work isn't actually specifically relate to actually jumping farther, it does allow us to recover from the many meets that we face in the US collegiate system. To me this is a critical phase of our training and it involves more interval running at moderate paces with set rest periods. One workout we use in the fall to gauge where we are in what I want from this period is 6 x 200 relatively quick pace with exact 2 minute rest period.

1. As we mentioned earlier we do some of our approach training in one of the regular lanes of the track instead of the long jump runway to guarantee that the athlete is not steering for the board too much. When we practice on the track we do not put anything down that would be the board, but just stand to the side and watch where the takeoff foot hits. We may mark that spot with tape or chalk to see where the pattern develops. We time these also. After some work under these conditions, we move to the actual runway and see if there is any difference in the time or distance of the run. For beginners or athletes that are having problems with a consistent run, we also use the count method where they count in their head every time the takeoff foot hits the track. If it is a 10-count run up, they would say in their head 1-2-3-4-5-6-7-9-9, and, jump. We only count the other foot on the penultimate and that is why there is the 9-and-jump count instead of just counting the takeoff foot and saying 9-10. This helps them remember the rhythm of the takeoff.
2. Our primary jump workouts involve sets of 6 stride (counting only the takeoff foot - 12 total strides) jumps. We count and use the concept above saying in our heads 1-2-3-4-5, and, jump. We call these 6 stride jumps short approach jumps. The first set of 3-6 x short approach jumps is for height. We use a high jump cross bar with a towel on it and hold it high above the pit and the athlete tries to put his/her head into the towel. I got this drill from Ralph Boston over 30 years ago. We take a recovery break and then do another set of 3-6 short approach jumps, but this time we jump for distance. We would then do some incline box jumps for in-air technique. We finish this workout with either runway work or sprinting on the track.
3. We have an incline box that is 6 inches high that we use to simulate the amount of airtime you would have on a good long jump. This allows the athlete to practice their in-air technique without the fatigue that would occur if they jumped from a full run. They get a similar takeoff angle and similar distance without much effort. We do not believe in jumping for distance during practice and do not take full run-up jumps except in meets. We have devised an inclined wooden box that elevates from ground level to about six inches. This gives the jumper good height from a short run-up and allows him to work more on his technique in the air and correspondingly is landing. It also overextends the lower foot tendons and muscles. We have also placed a 27" hurdle for women and a 30" hurdle for men about 3' from the box and between it and the pit to force them to emphasize the tall position and knee drive we want at takeoff.
4. We also use a 4" and a 6" square plyometric box to overload and also simulate the last three steps in a long jump. We jog, stride, and run onto the box depending on the time of the year and the experience of the jumper. In this drill the takeoff foot lands on top of the box and then the athlete completes the penultimate step on the track, the takeoff, and the landing. We emphasize being quick and trying to jump up at the end. Often we hold a crossbar with a towel hanging from it to emphasize driving the head up into it.

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5. We do as many sprint workouts as we do jump workouts. One simple workout that is a favorite for me is what I call flying 100's. We take a run-in start and start off the year asking the men to run under 12 as easy as they can with as perfect sprint mechanics as they can. We talk about staying tall and making sure they recovery heel comes up quick and tight under the buttocks. The women's time is 13.2. By the end of the year, the women may well be running 11.2-11.8 with the same feeling of ease and the men are often 10.4-10.9. This teaches good mechanics as well as the ability to run what I call fast-relaxed.
6. Savante Stringfellow did not sprint at all in high school, and he ran a 46.3 split on the 4 x 400 relay as a sophomore and a 20.66 in the open 200 as a senior, so his sprint ability had improved dramatically at the same time his jump distances were improving. Savante competed in several events while at our University and I think they all contributed in some way to shaping him as long jumper and making him better than had he only done the long jump. He high jumped, ran on the 4 x 400relay, ran the 100, the 200, and ran on the 4 x 100 relay during the past four years. Later in his career he high jumped less and sprinted more. Larry Myricks also had not run the open sprints in high school and he ran 20.44 in the open 200 as a senior. Brittney Reese had been out of track for two years when she joined us so her first year was more limited in this regard, but this year she ran 7.29 in the indoor 60 in her first year ever to run open sprints. She anchors our 4 x 100. She has sprinted more this year and her training will add more sprinting in the future as she adapts and progresses.
7. Weight training and various forms of plyometrics are a part of our workout routine, but not as significant as speed training. Sometimes to teach the rhythm of the last two steps we do some quick steps over small hurdles. We emphasize the strength area more during our fall conditioning phase than in our competitive phase, but we lift year round. Our practice warm-up has changed recently and I like the change a lot. We start off with barefoot strides on the infield grass. The lower foot is important to sprinting and in my opinion the least worked. These strides are easy and get progressively faster for the last few. We walk back each time so the sprinter/jumper has strided a ½ mile barefoot and walked a ½ mile. Next we do sprint mobility drills, followed by static stretching, then hurdle walk overs, then 3 x 15-20 with a weighted jump rope, followed by 2x 30 with 2-5 lb. arm weights in running motion, our sprint drill using football dummies, then take a 5 minute break and go into the day's main routine.
8. At one time I used tires to pull for power, and then moved to sleds with weights on them, but now have found one of the greatest tools for developing power and acceleration drive mechanics that I have ever seen. It is a machine called the 'Power Pull'. It has a series of dials that increase the resistance, and it continues to give resistance as you run. We use these a lot and really believe in them. The specificity of strength and power is perfect. They also raise the heart rate to its maximum level, so when we are working strength, power, and acceleration mechanics, we are also having a strong conditioning effect.

PHILOSOPHY OF THE JUMP

One of the great advantages of field events is that they allow the participant at least three attempts. Jumpers must always remain calm and learn something from each trip down the runway. They should never stutter-step or run through without jumping. Then, if behind or over the board, they will know exactly how much and can adjust on the next attempt. We will time them and then decide whether the steps were wrong or the speed and rhythm of the run-up was wrong. I prefer an original check mark and a mark for the first step only, but have recently started using a mid-mark with most of my jumpers to help me see if the run-up is consistent in the drive phase, and the last 4 strides. Jumpers should not be too concerned over foul jumps, but I like to get a safe jump in early in the competition and then let the rest of the jumps be where the athlete "goes for it". On the first jump, I do not want to be safe by being conservative in the run, but instead want to be fast and aggressive and slightly at the back of the board. Then, all we do is continue to be aggressive and fast and slightly move the run up. I want the run the same all the time. If I had to pick one thing to emphasize it would be the run. I think if we are competing fiercely we will have a foul jump and that is not a cause of worry. I just want them later in the competition. Both Brittney Reese and Savante Stringfellow seldom had any major run up problems and often hit a big jump early which put the pressure on the other jumpers. We have been very successful at coming out focused and hitting a winning jump early and I would say that is what we like to do when possible. We believe that a jumper will have a couple of fouls if he is really competing. Many foul jumps are better than the athlete's personal best, not because of the extra distance over the board, but because the athlete turned himself completely loose ... particularly during the last 4 strides.