

MENTAL IMAGERY REHARSAL AS A PSYCHOLOGICAL TECHNIQUE TO ENHANCING SPORTS PERFORMANCE

Dr. Athan N. Amasiatu

Department of Human Kinetics and Health Education,
Faculty of Education,
University of Port Harcourt, Rivers State,
NIGERIA.

athanamasiatu@yahoo.com

ABSTRACT

Researchers especially in the area of sports psychology are evolving better ways toward helping athletes to enhance their performance. One of such areas of scientific research at seems to have gained ground among scholars is the mental imagery rehearsal. There is therefore every reason to explore how this psychological skill works in sports toward enhancing athletic performance. This paper is posed to answer the question of what mental imagery rehearsal is all about, as a psychological technique used by athletes to enhance their performance. It also proffers for the athletes a mental imagery rehearsal program that could be used as an effective tool to enhancing the athlete's performance.

Keywords: Mental imagery rehearsal, Sport performance, skill development

INTRODUCTION

Mental imagery rehearsal is simply a mental technique that programs the mind and body to respond optimally. By using mental imagery rehearsal as a mental training tool, athletes have the capacity to see and believe, which gives them the confidence and focus to perform successfully. Infact many athletes use imagery, but they do not use it systematically and often are unable to control their images.

Mental imagery involves the athletes' imagery themselves in a specific environment or performing a specific activity. Hence, elite and numerous athletes are turning towards mental imagery rehearsal to take their game to the next level. Different uses of imagery in sport include: mental practice of specific performance skills, improving confidence, and positive thinking, problem solving, controlling arousal and anxiety, performance review and analysis, preparation for performance and during imagery, (plessenger 2009).

Sport psychologists have attempted to understand the exact mechanism that causes mental imagery to work. Evidence supports the effectiveness of imagery in improving sport performance, but only through a controlled systematic practice, (Murphy 2005). Numerous theories exist to support that mental imagery rehearsal is a veritable tool in enhancing sport performance.

MENTAL IMAGERY AS A PERFORMANCE ENHANCEMENT TOOL

Block (1981) identified human imagery, the use of visualization to imagine situations, as one of the most important topics in cognitive science. Two general theories were evolved.

- The first states that when we imagine a scene in our minds eye, we are scanning an actual image that has somehow formed in our brain. This is not to say that a brain surgeon could find actual physical pictures lodged in our

brains, but that the images are as real to us as an image taken from the retina of the eye. This position is held by the so called pictoralists.

- The second, position is that of the descriptionist. The descriptionist argues that there is no such thing as a mental image. That is when we imagine, but the graphic and detailed nature of our language makes it seem so. Our thoughts, as it were, actually manufacture an image so clear that we think we are seeing one.

Regardless of which view one takes, the images we see are vivid enough and therefore it makes little difference whether they are pictorial by nature or descriptively represented in our minds.

Furthermore fisher, (1986) clarifies that imagery is the language of the brain in a real sense, the brain really cannot tell the difference between an actual physical event and the vivid visualization of the same event. For this reason imagery can be used by the brain to provide repetition, elaboration, intensification and preservation of important athletic sequences and skills.

Another popular theory is Suinn's visual motor behaviour rehearsal (VMBR) model which posits that imagery should be a holistic process that includes a complete reintegration of experience. This includes visual auditory tactile emotional and kinesthetic cues.

He has demonstrated that physiological responses can result from athletes usage of mental imagery. Suinn's method is one of the few which has solid evidence to support its effectiveness, (Suinn 2005).

According to Henschen (2006), often imagery is thought of as synonymous with visualization, but this is inaccurate. Visualization is only one form of imagery. Most athletes are both visual and kinesthetic (feelers) imagers. Strangely enough, the more skilled an athlete becomes normally the more a "feeler" they become. The use of imagery as a mental training technique allows performers to draw on their imagination to perfect their performance.

Anshen, (2002) developed another model known as Anshen's tripe code model of imagery (ISM). According to him, there are three fundamental parts to an image. The first part is that the image itself must be a centrally arousing sensation so it is more like the real world. It has all the attributions of sensation, the only difference is that it is internal. This image provides the imager with so much realism that it can enable him or her to interact with the image as if it were the real world. Secondly there exists a somatic response.

Therefore, the very act of imagery results in psychophysiological changes in the body. Finally, the third part of the image is the actual meaning of the image; every image has a significant meaning and that specific meaning can imply something different to each individual. Since every person has a unique background and upbringing, the actual internal image can be quite different for each individual, even though the act of imagery instructions is the same, (Murphy, 2000).

Smith (1987) identified five basic principles of the application of imagery in sport.

These five principles include:

- Imagery skills can be developed.
- The athlete must have a positive attitude relative to the effectiveness of imagery.
- Imagery is most effective when used by skilled athletes.

- Knowing how to relax is a necessary precursor to the effective use of imagery
- There are two kinds of imagery, internal and external.

Emphasizing the importance of internal and external imagery in sport performance Mahoney and Avener (1977, 2007) explained that internal perspective means that athletes see the image from behind their own eyes as if they were inside their bodies, as opposed to the external perspective in which they see the image from outside their bodies as with a video camera.

THE USE OF MENTAL IMAGERY REHEARSAL IN SPORTS SKILL DEVELOPMENT

In sport, mental imagery is used primarily to help the athlete get the best out of him / her training and in competition. The developing athlete who makes the fastest progress and those who ultimately become their best make extensive use of mental imagery rehearsal. They use it daily as a means of directing what will happen in training and as a way of pre experiencing their best competition performances. Orlick (1990) explained that mental imagery often starts out simply, as you think through your goals, your moves, and your desired competitive performances. With practice it will develop to the point where, through imagery, you can draw on all of your senses to pre experience the achievement of many of your goals, moves, competitive performance and coping strategies. Coaches attending a mental skills training workshop indicated that they used imagery more than any other mental training technique and felt that imagery was the most useful mental technique that they used with athletes (Rodyers 2009).

Researchers are extending the knowledge of imagery use to understanding exactly how and why athletes use imagery. Besides engaging in cognitive mental practice to enhance athletic skills, imagery has been used by athletes for other motivational reasons, Palvio, (2005). From a sample of 40 elite gymnasts, 92% reported using imagery to practice skills and strategies, to recall and control emotions, to improve concentration, and to set goals, (Smith 2007).

Many athletes find it helpful to imagine and feel themselves performing perfectly immediately before competitive performances. High jumpers feel their ideal jumps, divers their perfect dives, skiers their best runs, gymnasts their perfect routines, archers follow their arrows to the centre of the target. Team sport athletes run through key offensive moves, quick transitions, and tough defensive moves. This process calls up the feeling of a best performance and focuses full attention on the task at hand.

It serves as a last-minute reminder of the focus or feeling you need to follow in the game. It takes your mind off thoughts of worry or self-doubt, gives a boost to your confidence, and frees your body to perform. Orlick, (1990) emphasized that doing mental imagery after a very successful performance, when the feeling is still fresh, can also be very valuable. It allows you to re-experience and hang on to successful aspects of the performance, which leads to further positive imagery and better performance.

HOW MENTAL IMAGERY WORKS TO FACILITATE PERFORMANCE

There are many theories and body of literature that tried to explain how imagery works but the most popular amongst them are psychoneuromuscular, symbolic and informational theories.

Psychoneuromuscular Theory (Muscle Memory)

This theory states that as athletes engage in sport movement, their brains are constantly transmitting impulse to the muscles for execution of the movement. Similar impulses occur in

the brain and muscles when athletes imagine the movements without actually performing them. Thus, the psychoneuromuscular theory asserts that vivid imagined events produce innervations in our muscles similar to that produced by the actual physical execution of the event. Coaches and athletes should know that mental imagery strengthens their muscle memories by having the muscle respond in the correct sequence without actually executing the movement, (William 2009).

Symbolic Learning Theory (Mental Blueprint)

In this theory, imagery may function as a coding system to help athletes acquire or understand movement patterns. All movements that we make must first be encoded in our central narrow system, we must have a blue print or code their movement into symbolic components, thus making the movement more familiar and perhaps more automatic. For example, a gymnast can use imagery to cue himself, on the temporal and spatial elements involved in performing a balance beam routine (Smith 2009) (William 2009).

BIOINFOMATIONAL THEORY

This theory assumes that a mental image is an organized set of propositions or characteristics stored in the brain's long-term memory; (Wrisberg 2000). When individuals engage in imagery, they activate stimulus characteristics that describe the content of the image for them and response characteristics that describe what their responses are to the stimuli in that situation. For example, imagining shooting a basketball free throw in the final seconds of a close game would involve the stimulus characteristics of the feel of the ball in the hand, the sight of the basket, and the sound of the crowd. The response characteristics of this image might include muscular tension in the shooting arm, increased perspiration, feelings of anxiety, and the joyous sight of the ball swishing through the net.

According to bio informational theory, for imagery to facilitate athletic performance, response characteristics must be activated so they can be modified, improved and strengthened. By repeatedly accessing response characteristics for a particular stimulus situation and modifying these responses to represent perfect control and execution of a skill, imagery is predicted to enhance performance, Smith (2000), Hecker (2008).

USE OF MENTAL IMAGERY FOR AROUSAL AND ATTENTIONAL CONTROL

Athletes commonly use imagery to psych up or clam down to meet the energy demands of a particular sport, as well as to visualize aspects of the upcoming competition to sharpen the focus they need to be successful, Suinn (1980). For example, a wrestler may use imagery before a match to psych himself up to a high energy level and to focus his attention on the specific strategies and moves he needs to use against a particular opponent.

The world's best athletes have extremely well-developed imagery skills. They use imagery daily to prepare themselves to get what they wants out of training, to perfect skills within training sessions, to make technical correction, to imagine themselves succeeding in competition, and to strengthen their belief in their capacity to achieve their ultimate goal, with performance imagery your ultimate goal is to draw on all of your senses to feel yourself executing skills perfectly. Imagery helps to establish a positive performance pattern. It also can strengthen self-confidence and help you believe that you can perform in the real situation, in the manner of which you are capable. Quality mental imagery combined with quality physical practice increases your overall effectiveness and brings you closer to your dreams.

USE OF IMAGERY IN CONJUNCTION WITH PHYSICAL PRACTICE

It is important to note that imagery does not take the place of physical practice. Nor is a combination of physical practice and imagery more effective than total physical practice within the same time frame, Hale (2001). However, mental practice improves performance significantly more than no practice at all.

Thus, we can think of imagery as a vitamin supplement that in addition to physical practice may give athletes an edge in competition. Imagery is valuable not as a replacement for physical practice but a way to train the mind in conjunction with the physical training of the body. Imagery might be a useful substitute for physical practice when athletes are fatigued, over trained, or injured.

By combining imagery with real movement, you can speed up and enhance the learning process. As you learn to use imagery to perfect old skills or acquire new ones, something else that you may find helpful is to carefully observe others who do those skills well. Watch an accomplished athlete perform a skill and as she is doing it, try to feel you doing it with him. Do this several times in a row, and then try to replay the skill in your own mind, feeling yourself do it. You can use this technique during practice or competition or while viewing videos.

You can also use mental imagery to learn new routines, plays, or patterns, and to familiarize yourself with a particular competition site, course or track. This helps them plan strategies and anticipate what they will do at various points in the race (for example, for climbing hills, negotiating sharp downhill turns, pushing limits). Sometimes athletes use imagery to thoroughly evaluate performances and pin point important areas for improvement. This process can help you become more aware of how your thinking and focus affect you at different points in the competition. Think about what you can do, or say to yourself in order to feel better, focus more fully, and perform more closely to your capacity. Then begin to practice focusing this way in training simulations and in your mental imagery for upcoming competition.

USES OF MENTAL IMAGERY REHEARSAL IN ATHLETIC PERFORMANCE

Mental imagery can be used for the following ways to enhancing athletic performance.

- To see success: - Many athletes “see” themselves, achieving their goals on a regular basis, both performing skills at a high level and seeing the desired performance outcomes.
- To motivate: - Before or during training sessions, calling up images of goals for that session, or of a past or future competition or competitor can serve a motivational purpose. It can vividly remind you of your objective, which can result in increase intensity in training.
- To perfect skills: - Mental imagery is often used to facilitate the learning and requirement of skills or skill sequences. The best athletes “see” and “feel” themselves performing perfect skills, programme, routines, or plays on a very regular basis.
- To familiarize:- mental imagery can be effectively used to familiarize yourself with all kinds of things such as a competition site, a race course, a complex play pattern or routine, a pre-competition plan, an event focus plan, a media interview plan, a refocusing plan, or the strategy you plan to follow.

- To set the stage for performance:- mental imagery is often an integral part of the pre-competition plan, which helps to set the mental stage for a good performance. Athletes do complete mental run-through, of the key element of their performance. This helps to draw out their desired pre-competition feelings and focus. It also helps keep negative thoughts from interfering with a positive pre-game focus.
- To refocus: - mental imagery can be useful in helping athlete to refocus when the need arises. For example, if a warm-up is feeling sluggish, imagery or a previous best performance or previous best event focus can help get things back on track. You can also use imagery as a means of refocusing within the event, by imaging what you should focus on and feeling that focus. In mental imagery it should be emphasized that the athletes should not focus on the outcome but on good performance, Plessinger (2009), Feltz (2000)

SETTING UP A MENTAL IMAGERY REHEARSAL PROGRAM

There are four phases in setting up the imagery program. First, the idea of using imagery must be sold to athletes. Second, the imagery ability of the athletes should be evaluated to develop the most appropriate type of program. Third, athletes must develop basic imagery skills. Fourth, a systematic program of imagery practice must be implemented and monitored.

INTRODUCING IMAGERY TO ATHLETE

Image only works for athletes if they believe in it. Convince the athlete that imagery can indeed help them program better and it is not a guarantee for success. It is simply a training technique that has been prone to enhance sport performance.

Approaches that have been found useful in introducing imagery to athletes is the analogy of building a machine. When athletes cautiously practice a sport skill over and over, they are in essence attempting to build a machine. For example, shot putters work hours requiring their technique in order to uncoil their body in maximum thrust. Coaches and athletes spend a great deal of time using drill and repetition attempting to build a flawless, automatic machine for optimal sport performance requires mental training as well as physical training.

The introduction of imagery can take place in an informal group setting if you are working with a team. We recommend that you are spending no more than 30 to 40 minutes summarizing some important points about imagery.

Define and give endurance

Briefly explain what imagery is by using a definition such as “practicing in your head”, without bogging them down with scientific research, provide some brief evidence that imagery does work to enhance performance. It is important to emphasize here that imagery is not magic but simply a mental technique that they can use to help their performance.

Explain how it works

You should provide a single and brief explanation for how imagery works to enhance performance. The amount of detail you get into here depends on the level of the athletes. Imagery creates a mental blueprint to make their states automatic or to build a machine.

Give specifics about how imagery will be used

Help the athletes to know exactly how imagery will be incorporated in their training. Keep it simple and smart enough that they can understand. It is important for athletes to quickly see how imagery can be applied to their practical needs.

EVALUATE THE ATHLETES IMAGERY ABILITY

Before implementing an imagery program with athletes, you must have an idea about their imagery ability. It is important to have an idea about the athlete's abilities to use all the senses and emotions when experiencing or practicing imagery.

One method of evaluation is to take the athletes through some of what we call basic training imagery exercises earlier discussed. Another way to evaluate imagery ability is to administer the sport evaluation, which measures athlete's abilities to experience different senses, emotion, and perspective during imagery.

BASIC TRAINING

Imagery is a skill. Athletes differ in their ability to develop vivid and controllable images just as they differ in physical ability. Basic training is important to a preseason physical conditioning program. By developing a foundation of strength and endurance, athletes are better equipped to fine tune their physical skills when the season begins. Also by strengthening their imagery muscle in basic training, athletes are more likely to benefit from the use of imagery during the season.

Basic training includes three types of imagery exercises. First, athletes need to develop vivid images. Like using a fine tuning control on a television, increasing their vividness of images sharpens the details of the image. The vividness exercises are designed to strengthen the senses that are important in sport performance. Second, athletes must be able to control their images.

Controlling ability exercises involve learning to manipulate images by will. Third, athletes need to enhance their ability to engage in self - awareness. It is a skill to use imagery to become more aware of underlying thoughts and feelings that often influences our performance without our realizing it. This type of imagery enables athletes to practice being detectives investigating their own feelings and behavior in sport. Self- awareness exercises will also increase athlete's vividness of emotional imagery as they try to graphically re-create their thoughts and feelings during competition. It is important for athletes to gain proficiency in all three types of imagery exercises. This will enable the athlete to use imagery exercises that are tailored specially for his/ her own spot.

IMPLEMENTING A SYSTEMATIC PROGRAM

After basic training, athletes should be fairly proficient at experiencing vivid images, controlling these images, and using imagery to become more self- aware. They should also be somewhat proficient at using all senses and emotions to create a total sensory experience.

Athletes are now ready to begin a systematic program of imagery. Keep in mind that imagery practice must be systematic to be effective. Your first concern is to build the imagery program must not be something extra but should instead be an integral part of training and practice.

The imagery program does not need to be long and complex. In fact when, first starting it is a good idea to keep it concise and simple. Initially, choose a sport skill or strategy that is easy to control. That is, choose a movement in which the environment is stable rather than reactive. Example is in basketball you could start with free throw shooting and in racket sport with the serve. As your athletes become more proficient and accepting the program, you can increase the variety of the program.

CONCLUSION

Mental imagery rehearsal has become one of the vital tools that can make the difference on the cutting edge to enhancing sports excellence if properly utilized. No matter how good or how limited your mental imagery skills are now, you can improve them through daily practice both at home and in your training setting. The truth is that if you can practice mental imagery rehearsal in your work outs, it will

- Force you to focus on what you are about to do
- Remind you of what you need to focus on to do it well, improve your imagery skill, and
- Set the stage for an enhanced performance.

Mental imagery rehearsal is indeed a truly psychological skill that if properly utilized could work to enhance athletic performance.

REFERENCES

- Anshen, A. (2004). ISM: The tripple code model for imagery and psychophysiology, *Journal of mental imagery*, 8, 15 – 42.
- Block, N. (1981). *Imagery*, Cambridge, MA: MIT Press.
- Felz, D. L. (2003). The effect of mental practice on motor skill learning and performance: *A metanalysis. Journal of sport psychology* 15, 25 – 27.
- Fisher, A. C . (1986). Imagery from a sport psychology perspective. A paper presented at the meeting of the American Alliance for Health, *Physical Education, Recreation and Dance, Cincinnati*.
- Hale, B. D. (1998), The effect of imagery – manipulated. Appraisal on intensity and Direction of Competitive Anxiety. *The sport psychology* 12, 40 -51.
- Henschen, K. (2005). *Mental Practice: Strategies and Techniques*. University of Uttah, Salt Lake City, Utta, U.S.A.
- Mahoney, M. J. & Avener, M. (1977). Psychology of the elite athlete: An exploratory study. *Cognitive Therapy and Research* 1, 135 – 141.
- Murphy, S. (2005). Model of Imagery in Sport Psychology: *A Review Journal of Mental Imagery*, 14 (3 and 4), 153 – 172.
- Orlick, .T (1990). *In pursuit of excellence: Leisure Press. A division of Human Kinetics. Champaign*, 11.
- Orlick, T, (2002) The effect of mental imagery training on performance enhancement with 7 – 10 yrs old children. *The sport psychologist*, 6, 230 – 241.
- Palvio A. (1985). Cognitive and Motivational functions of imagery in Human performance, *Journal of applied sports science*, 10, 22 – 28
- Plessinger, A. (2009). The effects of Mental Imagery on Athletic performance. Research paper at 2027 Washington D.C. The World Bank
- Smith, D. (1987). Condition that facilitate the development of sport imagery training. *The Sport Psychologist*, 1, 237-247.
- Suinn, R. (2005). Behaviour Rehearsal Training for skill Racers Behaviour Therapy 1. 519 – 520.
- Wrisberg, C. A. (2000). Cognitive demand and practice level: Factors in the mental rehearsal of motor skills. *Journal of Human Movement Studies*, 5, 251 – 258.