

# **CHAPTER - I**

## **INTRODUCTION**

The game of Volleyball plays an important role in the development of fitness. It is an excellent all round team sports and it has been widely accepted as a highly competitive and recreation game throughout the world. It can be played by men, women and children of all ages with a minimum of expense and effort. The game itself is stimulating mentally and physically, and it combines the values of an individual and team sports.

Most of the games played now-a-days nationally give enjoyment but also help to develop physical fitness and skills. The majority of Indian people in our country have become sick due to lack of physical fitness.

Volleyball is an Olympic sport in which two teams separated by a high net, hit a ball back and forth over the net between the teams. Each team is allowed three hits to get the ball over the net to the other team. A point is scored if the ball hits the ground in the opponent's court, if the opponent's commit a fault, or if they fail to return the ball properly. Keith Nicholas (1973) observed that volleyball is an action oriented game with none of the players acting as an involuntary spectator for a part of the game as in the other team games such as football, hockey and netball.

### **1.1 CHARACTERISTICS OF VOLLEYBALL**

Volleyball is a sport played by two teams on a playing court divided by a net. There are different versions available for specific circumstances in order to offer the versatility of the game to every one.

The object of the game is to send the ball over the net in order to ground it on the opponent's court and to prevent the same effort by the opponent. The team has three hits for returning the ball (in addition to the block contract)

The ball is put in play with a service; hit-by the server over the net to the opponents. The rally continues until it is grounded on the playing court, goes out or a team fails to return it properly. In volleyball, the team rally scores a point (Rally Point System) when the receiving team wins a rally, it gains a point and the right to serve and its players rotate one position clock wise.

Changes in rules often require changes in skills tests. The I-hit rules in the girl's game has caused some changes but the new, attack-type power volleyball game reflects a change in strategy that has influenced volleyball skills tests even more. The serve is fast and low or a floater, the pass or set is high and accurate, and the spike is decisive.

## **1.2 HISTORY OF THE GAME VOLLEYBALL**

On February 9, 1895 in Holyoke, Massachusetts, William G. Morgan, a YMCA physical education director, invented a new game called mignonette as a pastime to be played preferably indoors and by any number of players. The game took some of its characteristics from tennis and hand ball. Another indoor sport, basketball was catching on in the area, having been invented just ten miles (sixteen kilometers) away in the city of Springfield, Massachusetts only four years before mignonette (as volleyball was then known). It was designed to be an indoor sport less rough than basketball for older members of the YMCA, while still requiring a bit of athletic effort.

The first rules, written down by William G. Morgan himself, called for a net 6 feet 6inches (1.98 meters) high, a 25x50 feet (7.6x15.2) court, any number of players, a match composed of 9 innings with 3 serves for each team in each innings, and no limit to the number of ball contacts allowed for each error. Second try was allowed (as in tennis)while a ball hitting the net was to be considered a fault (with loss of the point or a side -out) except in the case of the first-try allowed to catch the ball and then throw it again.

After an observer noticed the volleying nature of the game at its first exhibition match in 1896 played at the spring field YMCA, the game quickly became known as volleyball (originally spelled as two words).Volleyball rules, along with rules for basketball, were slightly modified by the spring field YMCA and spread around the country to other YMCA locations.

An international federation, the federation international de volleyball (FIVB), founded in 1947, and the first world championship was held in 1949 (men) and (women). Volleyball was added to the programmed of the Olympic Programmed at the 1996 summer Olympics.

It was not until 1900 that a ball was made specifically for the new game, and the rules were not how we know them today. It took until 1916 for the skill and power of the set and spike to be introduced, and four years later a “THREE HITS” rule and back row hitting guidelines were established.

In 1917, the game was changed from 21 to 15 points. In 1919 American Expeditionary Forces distributed 16,000 Volleyballs to their troops and allies which provided a stimulus for the growth of volleyball outside the United States.

The first country outside the United States to adopt volleyball was Canada in 1900. The sport is now popular in Brazil, all of Europe (where especially Italy, Netherlands and Siberia are major forces since the late Eighties), Russia, other countries including China and the rest of Asia, as well as United States. The FIVB estimates that the people in the world participate in or observe indoor volleyball, beach volleyball or backyard (recreational) volleyball.

### **1.3 THE LIBERO**

In 1998 the libero player was introduced recently, the term meaning free in Italian. The libero is a player specialized in defensive skills. They must wear a different colored Jersey and cannot block or attack the ball when it is entirely above net height. When the ball is not in play, the libero can replace any back-row player, without prior notice to the officials. His or her replacements also do not count against the substitution limit each team is allowed per set.

The libero may function as a setter only under certain restrictions. If he makes an overhand set, he must be standing behind (and not stepping on) the 3 meter line, otherwise, the ball cannot be attacked above the net in front of the 3 meter line. A bump set is allowed from any part of the court.

## **1.4 COACHING**

Coaching for volleyball can be classified under two main categories:

Match Coaching and developmental Coaching. The objective of match coaching is to win a match by managing a team's strategy. Developmental coaching emphasizes players development through the reinforcement of basic skills during exercises which known as "drills". Drills promote repetition and refinement of volleyball movements, particularly in footwork patterns, body positioning relative to others, and ball contact. A coach will construct drills that stimulate match situations thereby encouraging speed of movement, anticipation, timing, and teamwork. At the various stages of a player's career, a coach will tailor drills to meet the strategic requirements of the team.

## **1.5 STRATEGY**

### **1.5.1 Player solution**

Players do not use all six skills, but rather focus on one or more of them in connection with the tactics employed by each team. The most common specialization comprises through positions, such as, attacker/blocker (also differentiated in 'outside' and middle) setter and liberos (defensive specialist).

Generally, taller players with the ability to jump high are utilized as attackers/blockers, where they attempt to block or spike opponents initial hits and return the ball at high speed on steep trajectories so that the ball lands before the other team has time to react.

Setters have the task for orchestrating the offense of the team. The aim for second touch and their main responsibility is to place the ball in the air where the attackers can hit the ball into the opponent's court in the easiest way as possible. They have to be able to operate with the hitters with variety and break up the enemy's block. Setters need to have swift and skilful appraisal and tactical accuracy, and must be quick at moving around the court.

Libbers are defensive specialists, who are responsible for receiving the attack or serve (the dig) and usually the players on the court with the quickest reaction time and best passing skills. Libbers do not necessarily need to be tall, as they never play at the net, allowing shorter players with strong passing skills to excel. A player designated as a libero for a match may not play other roles during that match.

Middle blocker or Middle hitters are players who can perform very fast attacks that usually take place near the setter. They are specialized in blocking, since they attempt to stop equally fast plays from their opponents and then quickly set up a double block at the sides of the court. In general, they are the tallest players, but are often less skillful defensive players.

Outside hitters also known as power hitters, attack from near the antennas since most sets to the outside are high, the outside hitter may take a longer approach, sometimes even starting from outside the court sideline. A nonoutside hitter generally relies on powerful swing to score, but some offensive plays may call for an angled approach and/or quick attacks to confound the defense. Outside hitters must also master passing, since they generally help the libero in receiving the opponents serve. A strong- side hitter is an outside hitter that specializes in attacking from the front - left position. This hitting position is advantageous for a right - handed hitter, because the set will come from the right, and can therefore be delivered efficiently to the hitting arm. Conversely, the attacker in the front- right position is the weak - side hitter, since the set is coming from his left, a right - handed hitter in the weak side position will have to swing across his body to attack. Thus, left – handedness can be a desirable quality in a weak- side hitter.

## **1.6 FORMATIONS**

The 6-2 and 5-1 are commonly used formations in competitive volleyball, the latter thoroughly preferred in high-level playing. The 4-2 formation is a more basic formation used in less competitive volleyball.

The 4-2 formation has four hitters and two setters. The setters usually set from the middle front position. (In the rare competitive 4-2, the setters more often set from the right front position).The team will therefore have two front-row attackers at all times.

The setters line up opposite each other in the rotation. The typical lineup has two outside hitters. By aligning like positions opposite themselves in the rotation, there will always be one of each position in the front back rows. After service, the players in the front row move into their assigned positions so that the setter is always in middle front. Alternatively, the setter moves into the right front and has both middle and an outside attacker. The disadvantage here lies in the lack of an off side hitter, allowing one of the other team's blockers to "cheat in" on a middle block. The clear disadvantage to this offensive formation is that there are only two attackers, leaving a team with fewer offensive weapons.

In the 6-2 formations, a player always comes forward from the back row to set, the three front row players are all in attacking positions. Thus, all 6 players act as hitters at one time or another, while 2 can act as setters. The 6-2 line up thus requires two setters, who line up opposite to each other in the rotation. In addition to the setters, a typical line up will have two middle hitters and two outside hitters. By aligning like positions opposite themselves in the rotation, there will always be one of each position in the front row move into their assigned positions. The advantage of the 6-2 is that there are always three front-row hitters available, maximizing the offensive possibilities. However, not only the highly specialized role of setter it also requires both of those players to be effective offensive hitters when not in the setter position. At the international level, only the Cuban National Women's Team employs this kind of formation.

The 5-1 formation has only one setter, who assumes setting responsibilities regardless of his position in the rotation. The team will therefore have front row attackers when the setter is in the back row, and only two, when the setter is in front row, for a total of 5. The player opposite the setter in a 5-1 rotation is called the opposite hitter. In general, opposite hitters do not pass; they stand behind their teammates when the opponent is serving. The opposite hitter may be used as a third attack option (back row attack) when the setter is in the front row. This is the normal option used to increase the attack capabilities of modern volleyball teams. Normally the opposite hitter is the most powerful hitter of the team. Even though the back row attacks come from the back-right position, they are increasingly performed by hitters also from back-center.

The 5-1 offense is actually a mix of 6-2 and 4-2; when the setter is in the front row, the offense looks like a 6-2. It is the formation almost always favored in today's high level volleyball. In women's NCAA play, the 6-2 is making a come back, and the change in 2005 was to increase substitutions from 12 to 15, supports this.

## **1.7 VARIATIONS**

### **1.7.1 Beach volleyball**

A newer variation of the game, beach volleyball has evolved from the popular social games of volleyball played on many beaches around the world. This version, rather than played on indoor hard courts, is played on sand courts which may either be formed naturally or built specifically for the purpose. Instead of a team six, each team consists of only two players, but otherwise the rules are almost identical with some exceptions including:

The size of the court (16x8m) (through many recreational players and regional organizations use the old 18x9 court).

The block always counts as the first contact.

The disallowance of the open hand dink plays where a player uses his finger tips to redirect the ball into the opponent's courts Instead of a hard spike. A dink may be performed with a closed hand or knuckle. Striker rules around double-contacts during hard setting.

The disallowance of the first contact being an open hand contact (i.e. set).

The time limit for serve is 5 seconds.

Many recreational players still use the side outscoring system rather than rally scoring, whether side-out or rally scoring is used that will generally match up with whether or not the old or new court size is being used

### **1.7.2 Indoor Sand Volleyball**

This is an even newer variation than beach volleyball. As beach volleyball took volleyball outdoors, indoor sand volleyball takes beach volleyball indoors. In the United States, growing number of colleges are now considering switching from hard

court indoor volleyball to sand indoor volleyball. The primary reason for the possible change is the reduced rate of injury of players. Secondary reasons are:

Bad weather doesn't cancel play, something that commonly happens with beach volleyball. It is thought to make the game more appealing to spectators since Sand courts do not require players to wear elbow and knee pads or shoes.

Indoor sand volleyball teams vary from two to six members, college teams having six. Normally, rather than using a purpose-built hall, an indoor basketball court is converted. A protective tarpaulin covers the floor of the basketball court and soft is laid a foot deep over it. The boundaries are commonly marked off with lines in the sand. However, a recent innovation uses colored lasers that illuminate the lines in the sands.

### **1.7.3. Sitting Volleyball**

Sitting volleyball for locomotors-disabled individuals was introduced in 1956 by the Dutch Sports Committee. International Competition began in 1967, but it was before 1978 the International Sports Organization for the disabled (ISOD) sanctioned the sport and sponsored an official international tournament in 1979 at Harlem, Netherlands. The game is played on a smaller 10x6 meter court and with a 0.8 meter -wide net set to a height of 1.15 meters for men and 1.05 meters for women. Whiting or attacking the ball, the player must have one "buttock "or an extension of torso still in contact with the floor. Traditionally, the sport has been played not only by amputees and people with polio, but also by people who have orthopedic problems in their knees or ankles. Often able-bodied players are on the club teams. Because of the game's quick pace, the use of your hands to move and play the ball, a good balance and study are a necessity. Consequently, it is not the ideal sport for most paraplegics.

Men's sitting volleyball was introduced to the Para Olympics Games in 1980 and has grown to be one of the more popular Para Olympics sports due to the fast and exciting action. Women's sitting volleyball was added to the Programme for the 2004 summer Para Olympics in Athens, Greece. The International governing body for the sports is the world organization volleyball for disabled (WOVD).



#### **1.7.4 Blind volleyball**

Another variation that to remove height of players as a determining factor in team success is blind volleyball. Ad-hoc blind volleyball is where sheets are dropped over the net so one side cannot see the other side. A more formal type of blind volleyball removes the traditional volleyball net and replaces it with a tarp thick enough that shadows cast on it cannot be seen from the other side blocks, spikes, and overhand serves are prohibited. Blocks are almost impossible to do since it is difficult to know where the ball is going to come over the net. Spikes and overhand serves are prohibited because it is already very difficult for the receiving team to react to any incoming ball without the increased speed of a ball struck in such a manner.

Blind volleyball additionally creates a higher level of suspense for spectators, who, unlike the players, can see what is taking place on both sides. Another unique feature of blind volleyball is how it can make the back row the row that hits the ball over the net. In regular volleyball, the back row tends to receive the volleyball and then move it to the front row. In blind volleyball, moving the ball to the back row makes it harder for the other team to see where the ball by hitting the ball on a flatter trajectory, the back –row players can more easily surprise the receiving team on where the ball will be coming over the net. However, this variation of volleyball is unknown to most people.

#### **1.7.5 Nine- Man Volleyball**

A variation of volleyball utilizing nine players and a slightly larger court originated in Asia in the 1920s when American missionaries introduced the game in China. The variant became popular within the Chinese-American communities in large U.S and Canadian cities, and continues to grow with a rotating popular tournament called the North American Chinese invitational tournament.

#### **1.7.6 Wally ball:**

Wally ball is played in a racquet ball court, which is divided into two halves by a net. The game is played like volleyball, with the added complexity that players may carom the ball off a side wall when playing in into the opponent's court. If a ball

played over contacts the ceiling, the opponent's back wall, or both side walls without being touched by an opponent, the confined quarters encourage quick action and the walls often keep the ball conveniently in play.

Sepak takraw is a variant of volleyball popular in Asia, similar to foot volley. Players use their feet to get the ball over the net: the game is played on a badminton doubles court.

### **1.7.7 Mixed teams**

Most competitive volleyball is played with same sex teams (exclusively so at the elite levels) different sets of rules have been drafted to allow for mixed teams. The net is usually but not always at a height half way between men's and women's height. Several adoptions are common, some of them to compensate for the men's greater length and strength.

A minimum number of female players must be on the field.

Alternating male and female players in the rotation or service order.

Women's - height net and men prohibited from spiking inside the three meter line. Men's -height net in which one man may come from the back row to block, but not hit.

At least one contact of a team's possible three contacts must be made by a female player. Strategically, this usually means the setter on a mixed team is usually a female player.

There is no standardization in these rules because mixed volleyball is not played at professional or international level.

### **1.7.8 Foot Volley**

Foot volley is an entirely new sport which combines beach volleyball and soccer skills where the difference is that the players may not contact the ball with their hands; instead can only use all other body parts including their feet, head, shoulders, and chest, etc. Sport originated in Brazil, but is quickly becoming popular in the U.S., Europe, and Asia.

### **1.7.9 Ecuadorian Volleyball**

A variation with 3-player teams on clay courts with a higher net.

### **1.7.10 New comb**

A simplified form used to teach the fundamentals of volleyball. New comb is generally taught to school – aged children but is also popular among adults of limited athletic ability. Its main difference from regular volleyball are that the ball can be caught before passing on to a team-mate or over the net ,and each pass or serve is a Harrow rather than a hit while most other volleyball rules apply ,variations on the numbers of players per team and the members of ‘catches’ per side are common.

## **1.8 OTHER RECENT RULE CHANGES**

Other rule changes enacted in 2000 include the introduction of the let serve which allows play to continue even if a served ball touches the net as it continues into the opponent’s court. Also the service area was expanded to allow players to serve from anywhere behind the end line but still within the theoretical extension of the side lines. Other changes were made to lighten up calls on faults for double – touches, such as allowing a “hard ball” to be slightly carried. From 2006, one of the changes was when failing the first (as in tennis) or a second alternative libero in the team.

## **1.9 CONSTRUCTION OF SKILL TEST AND COMPILATION OF NORMS FOR COLLEGE WOMEN VOLLEY BALL PLAYERS**

A player stands behind the baseline and hits (or serves) the ball, in an attempt to drive into the opponent’s court. The main objective is to make it land inside the court, it is also desirable to set the ball’s direction, speed, and acceleration so that it becomes difficult for the receiver to handle it properly. Serve is called an “ace” when the ball lands directly onto the court or travels outside after being touched by an opponent. In contemporary volleyball, many types of serve are employed.

**Underhand and overhand serve:** Refers to whether the player strikes the ball from below, at waist level, or first tosses the ball in the air and then hits it above shoulder level. Underhand serve is considered very easy to receive and is not generally employed in international competitions.

**Sky ball serve:** A specific type of underhand serve, where the ball is hit so high it comes down almost in a straight line. This serve was invented and employed almost exclusively by the Brazilian team in the early 1980's. It is now considered outdated.

**Line and cross-court serve:** Refers to whether the ball flies in a straight trajectory parallel to the side lines, or crosses through the court in an angle.

**Spin serves:** An overhead serve where the ball gains topspin through wrist snapping.

**Floater:** An overhead serve where the ball is hit with no spin so that its path becomes unpredictable can be administered while jumping or standing. This is akin to a knuckle ball in baseball.

**Jump serve:** An overhead serve where the ball is first tossed high in the air, then the player makes a timed approach and jumps to make contact with the ball. There is usually much topspin imparted on the ball. This is the most popular serve amongst college and professional teams.

**Round – House serve:** The player stand with one shoulder facing the net, tosses the ball hits it with a fast circular movement of the arm .Usage of this serve in indoor volleyball is today restricted to a few Asian Women's teams. The motion is much like in tennis swing. The ball is the palm of the hand, creating a lot of spin.

## 1.10 PASSING

Also called reception, the pass is the attempt by a team to properly handle the opponent's serve or "free ball". Proper handling includes not only preventing the ball from touching the court, but also making it reach the position where the setter is standing quickly.

The skill of passing involves fundamentally two specific techniques; Underarm pass , or bump ('bacher' in European terminology), where the ball touches the inside part of the joined forearms or platform, at waist line , and overhand pass, where it is handled with the finger tips above the head and is common of setters.

### **1.11 SETTING**

The set is usually the second contact a team makes with the ball .The main goal of setting is to put the ball in the air in such a way that it can be driven by an attack into opponent's court. The setter coordinates the offensive movements of a team, and is the player who ultimately decides which player will actually attack the ball.

As with passing, one may distinguish between an overhand and a bump set since the former allows far more control the speed and Direction of the ball. The bump is used only when the ball is so low it cannot be properly handled with finger tips. Sometimes a setter refrains from raising the ball for a teammate to perform an attack and tries to play it directly onto the opponent's court. This movement is called a 'dump'.

### **1.12 ATTACKING [SPIKING]**

The attack (or spike, the slang term) is usually the third contact a team makes with the ball. The object of attacking is to handle the ball so that it lands on the opponent's court and cannot be handled or defended. A player makes a series of steps [The Approach] jumps and then projects his body forward, thus transforming its kinetic energy to the ball when contact is made.

**Back court attack:** An attack performed by a player not standing at the net. the player cannot take off on or beyond the 3 meter line before making contact with the ball, but may land in front of 3 meter line.

**Line and cross court attack :** refers to where the ball flies in a straight trajectory parallel to the side lines , or crosses through the court in an angle across – court shot with a very pronounced angle resulting in the ball landing near the 3 meter line is called a cut shot.

Dip/Dink /Tip/Chat: The player does not try to make a hit, but touches the ball lightly, so that it lands on an area of the opponent's court that is not being covered by the defense. Tool /Wipe/Block –abuse: The player does not try to make a hand spike, but hits the ball so that it touches the opponent's block and then bounces off court. Off- Speed hit: The player does not hit the ball hard, reducing its acceleration and thus confusing the opponent's defense. Quick hit/"one": An attack in which the approach and swing begin before the setter contacts the ball. The set (called a 'quick set') is placed only slightly above the net and the ball is struck by the hitter almost immediately after leaving the setter's hands. Slide: A variation of quick hit that uses a low back set. The middle hitter steps around the setter and hits from behind him.

Double quick hit/ 'stock'/ 'Tandem': A variation of quick hit where two hitters, one in front of the setter, jump to perform a quick hit at the same time. It can be used to deceive opposite blockers and free a fourth hitter attacking from back court, may be without block at all.

### **1.13 BLOCKING**

Blocking refers to the actions taken by players standing at the net to stop or alter an opponent's attack. A block that is aimed at completely stopping an attack, thus making the ball remain in the opponent's court, is called offensive. A well executed offensive block is performed by jumping and reaching to penetrate with one arm hands over the net and into the opponent's area. The jump should be timed so as to intercept the ball's trajectory prior to it crossing over the net. Palms are held deflected downward about 45-60 degrees toward the interior of the opponent's court.

By contrast, it is called a defensive, or 'soft' block if the goal is to control and deflect the hard driven ball up so that it shows down and becomes more easy to be defended .A Well executed soft block is performed by jumping and placing one's hands above the net with no penetration into the opponent's courts and with the palms up and fingers pointing backward.

Blocking is also classified according to the number of players involved. Thus, one may speak of single (or solo) double, or triple black. Moreover, positions where defenders place themselves while opponent hitters are spiking depend on the block position.

## **1.14 DIGGING**

Digging is the ability to prevent the ball from touching one's court after a spike, particularly a ball that is nearly touching the ground. In many aspects, this skill is similar to passing or bumping. Overhand dig and bump are also used to distinguish between defensive actions taken with finger tips or with joined arms.

Some specific techniques are more common in digging than in passing. A player may sometimes perform a 'dive' i.e. he throws his body in the air with a forward movement in an attempt to save the ball, and land on his chest, when he also slides his hands under a ball almost touching the court, is called a "pancake".

Sometimes a player may also be forced to drop his body quickly to the floor in order to save the ball. In this situation he makes use of a specific rolling technique to minimize the chances of injuries.

## **1.15 NEW VOLLEY SKILL TEST; NEED AND ITS IMPORTANCE**

Multifarious reasons can be attributed to why a physical educator should attempt to formulate new test, in the face of numerous tests already existing. As change is the only permanent thing in this universe, to give an existing. As change from the routine tests and procedures to the students is a sort of motivation. Secondly, the existing tests may not give exactly what is necessary at the moment.

Many existing sports skill tests were developed some 20 to 50 years ago. Since then many improvements in measurement techniques, sea of changes in rules and regulations, playing procedures, various developments in identification and classification of skills and their patterns, have rendered many of these older tests and its test items and the way they are administered not related to actual game play. Physical educators must also remember that validity, reliability, and norms must be specific. The applicability of tests, its items and the norms should not be over generalized beyond the purpose and for the population to which they are intended. Many skills tests and the norms were developed on college students, but they are probably inappropriate for use in testing Sub-Junior, Senior and High School students exist beyond the physical and emotional maturity.

A test is merely one form of measurement, while the measurement itself involves all the tools which may be employed in the collection of data. Hence the testing may be conducted in a formal manner and the Measurements provide information about specific act which has taken place at a specific time.

### **1.16 TEST**

Johnson and Nelson (1986) define the test “as a form of questioning and or measuring used to measuring assess retention of knowledge and capability or to measure the ability in some physical endeavors”. They also pointed out some important steps in test construction. They are as follows:

**Step-1:** To analyze the game or physical qualities in question, in order determine the skills or factors that are to be measured. This kind of course necessitates a through understanding of what is involved in the physical performance that is being evaluated.

**Step-2:** Select test items that measure the designed qualities unquestionable. This is one of the most crucial steps in the entire test construction procedure.

**Step-3:** Establish the exact procedures for the administration and scoring of the test.

**Step-4 :** Determine the Reliability of each test item.

**Step-5 :** Compute the Objectivity of each test item.

**Step-6 :** Establish the Validity.

**Step-7:** Revise the test in the light of the findings of the steps which describe and finalize the written instructions for administering and scoring the test.

**Step-8:** Construct Norms. The test score can be converted into percentiles or T-Scores and norms for each test should be prepared.



### **1.17 MEASUREMENT**

Johnson and Nelson (1986) described that “the measurement should be conducted for the purpose of evaluating the outcome of physical education in the light of educational objective. It is broader than the test alone. A test is merely one form of measurement, while measurement itself involves all the tools which may be employed in the collection of data. While testing one must conduct it in a formal manner but the measurement may be made informally as well as formally”.

### **1.18 EVALUATION**

Johnson and Nelson (1986) further stated that “the evaluation transcends mere measurement, in that basically subjective judgments are based upon the data collected in the measurements process. Such judgments may aid us in determining the extent to which we are accomplishing our objectives”.

### **1.19 SIGNIFICANCE OF TESTS, MEASUREMENTS AND EVALUATION**

Tests, Measurements and Evaluation are used:

To motivate students when they are not interested in the instruction and also help the teacher too in the unit of instruction of a high level of interest.

To help the teacher to assess the students performance.

To help students to evaluate their own knowledge and/or skills in various physical activities.

Enable the teacher to objectively measure the improvement by testing before and after the unit of instruction.

To assist the teacher in pin – pointing the limitations as well as the strong points in a programme.

To aid the teacher in evaluating different methods of instructions.

To provide a means for determining the better performance within a group and to gain insight as to the potential ability of others.

To provide a basis for the classification of players and teams for practice and competition.

To diagnose the needs in relation to the body mechanics, fitness and motor skills.

To establish age, sex, and grade level norms for use within schools or districts as well as for comparison with national norms.

To determine statutes and changes in statutes brought about by physical education for public relation purposes.

To collect data for research.

To help for determining the relative values of sports activities in terms of meeting the designated objectives.

To determine the needs of individuals within the programme and the latest to which educational objectives have been accomplished. Finally, to enable the teacher to evaluate his own teaching effectiveness.

## **1.20 CRITERIA FOR THE SELECTION OF TESTS**

Bosco and Gustafson (1983) determined the following four criteria that may be considered in the selection of test construction. 1. validity 2. Reliability 3. Objectivity and 4. Administrative usability. Among these four Criteria, the validity is the most important. However, the discussion of validity is incomplete without an analysis of reliability.

The selection and construction of tests the most important phases of measurement and evaluation programmed. If poor test are selected or constructed the evaluation programmed will inevitable be very weak as well .A test cannot be considered valid unless it possesses suitable reliability .Once validity and reliability have been satisfied ,the administrative usability is the next focus of attention with objectivity, in physical tests, the practice of having students paired off so that one is scoring the performance of the partner is quite common and in these settings, objectivity of the scores assumes greater importance than for a written test that is to be scored only by the teacher with a key.

### 1.20.1 External Criterion

The test scores are correlated with subjective rating by judges, juries coaches etc. or with rankings, resulting from round –robin or ladder tournaments. Whenever possible rankings obtained from actual competition are to be preferred over subjective ratings .If the individual scores highest on the skill test are the better performers under conditions, then the test is said to be valid one.

### 1.20.2 Internal Criterion

The test scores are correlated with an expanded battery of test items composed of fundamental components (skill elements) of a more complex Skill. For example, a battery of 10 Badminton skills is purported to measure Badminton ability. By multiple choice of technique, it is determined that three of the items correlated highly with all the ten .It is then assumed that three item battery is a valid test of Badminton. This is a highly questionable practice and should be avoided unless the original ten items are first validated against external criterion.

**Scott Going (1990)** emphatically says that is to be more useful test items must have validity .It must measure what it purports to measure. To be valid the test items must be reliable and objective and relate logically to the purpose of the test as a whole.”

## 1.21. VALIDITY

According to **Kirkendall (1987)**, “validity is an all encompassing term. The term validity is used primarily in terms of whether a test is relevant and applicable to a particular situation. Validity can be defined as a device that actually measures what it is intended to measure. It will help to determine who is best and who is not. By these it can be construed that a synonym for validity might be relevance. If a test has poor validity or relevance, it is a waste of time to use it. In determining the validity of a test can be used four types of classified validity.

They are: Content or logical validity: This is usually the first step in constructing a valid test. If a test contains the items that logically measure the skill or ability that is to be measured, then it has logical or content validity. It is established by assumption or definition; hence it does not determine the degree to which a test

measures what it is intended to measure. For construction of a new skill test and determining the degree of its validity the content validity is essential but not sufficient since the degree of attests validity must be determined objectively.

**Construct validity:** It is a statistical method used to verify content validity especially a construct or structure of some ability or phenomenon derived from logical thought is proposed, then a statistical check is made to determine whether that construct actually exists. The psychological constructs and physical performance constructs can be measured by using this validity. Three techniques are used to establish construct validity; they are factor analysis, multiple regressions of test batteries and testing differences between extreme groups. These techniques are more appropriate to some situation than to others.

**Concurrent validity:** It is an empirical or a statistical means to determine the validity of a proposed test which is normally used to establish the criterion for the variable that one wishes to measure and then determine how closely the test relates or predicts this criterion. This form of validity is called concurrent or criterion related validity. For establishing this validity the most important step is determining what criterion will be used. Three common criteria are used for establishing the concurrent validity .This can be done by a panel of judges who rate the student's ability in the skill (variable) under consideration .This rating is subjective and can provide guidelines to the raters to establish some assurance that they are rating the same skill components. Then the proposed test is given to the same students'. The regression equation to predict the judge's ratings from the proposed test are then determined. Secondly, the tournament results are used as criterion to determine the concurrent validity. This is more effective for determining the validity of skill tests for specific sports. Thirdly, the established valid test criterion is used as the means of establishing concurrent validity. Hence the validity coefficient is the correlation between the proposed test and the established test. The Regression equation accompanying this correlation coefficient predicts the Scores on the established test by use of scores on the proposed test.

**Predict validity:** This validity involves the use of criterion to be predicted. The correlation between the test scores and the player's success rating indicates the tests predictive validity. If the correlation is satisfactory then a regression

equation is determined for the prediction to be successful one. This can be used in new group. If it is successfully predicted the relative success of new group then it can be concluded that the predictive validity has been established.

## 1.22 RELIABILITY

It is the second most important criterion to be considered in test construction and its selection. A *Kirkendall (1987)* stated that, the reliability is the degree of consistency with which a test measures it is to measure. In another way a tests reliability is in terms of whether the test measures the true average performance of an individual, For example, the obtained score = true score. Where the true score represents the performance level that truly indicates the individuals obtained scores that is due to one or more factors other than the individuals true ability. If a test is perfectly reliable, the obtained scores are equal to the true scores. When a test is measuring true scores, a person taking the test more than once will score the same every time when the test is conducted.

Two major areas or classifications of error contribute to the error score. They are measurement error, and the systematic error. The measurement error is because of inaccuracy in the equipment, scorer errors and the test administration.

But the systematic error is because of the changes in performance or behavior due to biological factors. Both these error affect the reliability of a test. Among these errors the measurement error can be controlled and eliminated through careful administration of tests and the equipment. But the systematic error is generally more in the motor performance testing, because it consists of repeating more than one trial of the same task and it needs to be repeated on different days. For determining the reliability, some methods were suggested.

Test, Re-test reliability: In this a test is to be administered on two different occasions to the same group (test, then retest) and determine the correlation between the two sets of scores. This correlation is called the coefficient of stability. It is because of the time interval between the two administrations is short so that the individuals are not likely to repeat error performance. In all cases the condition for the test administration should be precisely the same on both times the test administered.

Equivalent forms reliability: This can be estimated by determining the correlation between score on two equivalent forms of a test taken by same people. This is called as coefficient of equivalence. But it is difficult to obtain two equivalent test hence this method is not practical.

Split-Half Reliability: In this method a test is administered to a group and the test results are then split into two equal halves for scoring. The scores obtained for each half are separated by splitting the scores as odd and even number of trials. The Correlation between the two scores of the test results is determined.

### 1.23 OBJECTIVITY

According to **Margaret. J. Safari (1973)**, "The objectivity of a test is defined as the degree of agreement among testers. Objectivity is that in which the data will be scored identically by different scorers.

A synonym for objectivity might be the rater's reliability, that is, the consistency with which different testers score or judge a performance. To determine tester's reliability for a test, two individuals score that test or judge the performance of all tested student, and correlation coefficient is determined. This coefficient indicates the degree of agreement between the two judges' scores or ratings. Like the validity and reliability several factors can affect the objectivity of a test.

### 1.24 NORMS

A norm is a standard point of reference that can provide basics for judgment norms are used to interpret relative standing to compare scores or groups and either to combine or average scores. Norms imply a large number of cases. One hundred cases is minimal and several hundred is more desirable **Barrow and Mcgee (1971)**.

Norms are derived scores that are determined from the raw scores obtained by a specific group on a specific test. A norm should not be viewed as a standard against which a students is to be judged. When ever norms are determined for a given people, half of the people will full above middle of the distribution and half will fall below. There is no inherent value attached to any given norm score. The norm identifies a person in relation to a given sample whose norm has been determined.

Any judgment made about the norm .s made by the person using the norm score. *Safari, (1973).*

Norms are developed by transforming the raw scores of a given norm group in to same type of derived scores so that they may be interpreted more easily. Raw scores can be converted to percentage - correct scores, in which the score actually obtained on the test is divided by the highest possible test scores. This type of conversion is useful for tests of motor skill and abilities, but cannot be used for comparison among tests.

Four types of norms have been most commonly used grade age, percentile and standard score norms. Grade norms are determined by computing the average of the raw scores for each grade, and using the grade equivalent in place of the average. Age norms are determined by computing the average of the raw scores for each age and using the age equivalent in place of the average. Percentile norms are determined by the percentage of individual in the norm group who falls bellow an individual's score, Standard norms score are represented by the distance of the given raw score above or below the mean of the norm group as expressed in standard deviation units. Although all types of norms have advantages and disadvantages, the use of standard scores or percentiles is generally recommended. Safari (1973).

### **1.25 IMPORTANCE OF NORMS**

Norms always represent the achievement level of a particular group to which the obtained scores can be compared. It is obvious that a test accompanied by norms have several advantages over the test without norms. Norms enable the instructor to interpret the student scores in relation to a larger group in the same population. Its use enables comparison of the performance of a student with other pupils and gives uniform meaning to the comparison of a student's score on the one test with his or her score on another one. In addition, norms provide a reliable and useful basis for interpretation and evaluation of test results. The following factors must be taken into consideration in the development and use of norms.

**Sample:** The sample must include a large number of cases so that it approximates the population considering the age, sex, race, education level, socio-economic status and sampling method.

**Administration:** The administration of the test must be standardized.

**Representativeness:** The norms should be true representative of the population for which the test is intended.

**Temporariness:** The norms generally are temporary and can be expected to change and should be periodically evaluated.

**Presentation:** Norms should be presented in a format that is easily understood.

**Comparability:** Often it is necessary to compare the scores from different tests to evaluate the student's performance.

## **1.26 TYPES OF NORMS**

Usually four types of norms have been most commonly used in comparing the test scores.

**Age norm:** it is based on the average performance of students at various age levels. It is relatively easy to understand .in this comparison of different traits, it is difficult to make, because of the lack of uniformity of units.

**Grade norm:** Almost the age and grade norms have similar characteristics. it is based on the average scores earned by the students and interpreted through the use of grade equivalents. it is not often used like age norm since the grade equivalents are based on units that are unequal from grade and it complicates interpretation substantially.

**Percentile Norm:** The percentile norm is widely used in all the statistical analysis. it is easily calculated and relatively well understood. it provides a basis for interpreting an individuals score in terms of his or her standing in some specified group. The norms using percentiles are widely applicable for many situations, and easy to interpret by the student as well as the instructor. This norm is useful in



physical education because many components of the psycho motor domain can be tested. The major drawback of percentile norm is inequality of units. In the middle of the normal distribution a rather small change in the raw score gives a rather large percentile change. At the end of the distribution, the reverse is true. With careful interpretation the limitation of percentiles can be overcome.

Standard score Norms: since the norm system has its limitations on percentiles, efforts are made to find scales that have units with the same meaning through the entire range of scores. Several sophisticated standard score scales have been developed to score for these purposes. They are Z-score, 6-sigma scale and the Hull scale. With these types of standard scores the relative performance of an individual can be expressed in units that are equal over the entire scale so that a small difference at one point on the scale has the same meaning as an equal difference at some other point.

All types of norms have advantages and disadvantages. The use of standard scores or percentile norms is generally recommended by the experts in the field of physical Education.

### **1.27 CRITERIA FOR SELECTING NORMS**

All educationists have been interested in this function of measurement in knowing how much a student has achieved and to examine his score in relation to the scores of others on the same test, in other words, a student's scores are compared to other student scores. Here differences are anticipated because some students are expected to perform better than others. and this function identifies the test as norm. **(Safrit ,1973) Johnson and Nelson (1986)** state the following as some of the criteria for the norms.

The number of subjects to compute the norms should be sufficiently large. Generally speaking, the larger the sample the norm likely will approximate the population.

The norms should represent the performance of the population for which the test was devised.

The geographical distribution that norms represent should also be taken into account, as considerable variation in performance is often found among students belonging to different geographical locations.

The clarity of the directions for the administration and scoring is definitely involved in the evaluation of the accompanying norms. Norms are only temporary and most of them should be periodically revised.

The decision to use a table of norms should be based : five criteria relevance, representativeness, recency comparability and descriptive detail. If the norm group is similar to the individuals who will be compared, the norms re relevant. If the norm group consists of an adequate sample of the type of individuals described the norms are representative Norms should be reasonably up to-date so that the present level of ability of students is reflected. Norms for subjects within a battery of tests should be based on the same norm groups so that the sub-test norms are comparable. A table of norms should be accompanied by a detailed description of the norm group and the testing circumstances. Safrit (1973).

## **1.28 REASONS FOR SELECTING THE TOPIC**

The research scholar has been very much involved with the children and has found it difficult to conduct the existing tests of coordinative ability and fit them in the norms provided by the authors. Since most of the tests have been constructed and normated on western countries. Indian children are not able to achieve the hare minimum of scores in the norms.

Many of the tests have norms for American standards with which it is impossible to grade our children since a majority percentage of children do not reach the minimum stand of the normative structure. Hence the scholar has been motivated to construct norms for coordinative ability.

Norms is a standard point of reference which provides a basis for judgment. It is used to interpret relative standings to compare scores or group and whether to combine or determine average scores. It can be derived from the scores obtained as raw from a specific group for one specific test. It implies a larger number of cases. One hundred cases are minimal and several hundred are more desirable. The norms

are determined for a given group of people, half of the people will fall above the middle of the distribution and half of the people will fall below. Any judgment is made based on the norms by the person using the norm score. **(M.Hebbel Inole and J.Borms, 1974)**

The norm is a scale that permits conversion from raw score to a score which is capable of comparison and interpretation. In a table of norms, raw scores and derived scores are typically presented in parallel columns for easy conversion and interpretation when there is a norm. It is the true representative of some larger population. Such cases as above do not make good norms but coupled with proper sampling, this provides a symmetric distribution. If the performance of a group is not similar in range and average to the normative group, then the norms are not appropriate and should not be used for interpretive purpose. Generally, the norm scale is sufficiently sensitive to make discrimination between the scores of the different subjects. Normally, the Hull scale will be the final choice and mostly preferred over the other type of scales, because this scale is more applicable to the real testing situation where great variations are present. The norm scales are accepted as one, valid and practical criteria for evaluating the individual physical fitness tests. When norm scales are being constructed, one must consider the following practical statistical and educational principles. They are: 1.Sampling techniques 2. Equivalency 3.Progressivity 4.Sensitiveness

### **1.29 HULL SCALE AND ADVANTAGES**

Becker (1960) says that the hull scale, which extends to + 3.50, may be considered a compromise between the T-scale and the 6-zigma scale, and the occurrence of an extreme score falling outside the scale is more remote than for the 6-zigma scale. However, an exceptional score can fall outside this scale. In constructing Hull scales for Medford boy's growth study data, a check was run on the number of scores that were sufficiently extreme as to extend above 0 point and below 100 point in the distribution. In one study, a total of 412 boys of six age groups ranging from 9 to 14 were tested, with eight anthropometric tests. Thus for the eight scales, 3.296 entries were made (412boys x 8 scales =3.296) for all scales, only seven entries (.02%) were above 100, and only one entry was below.

### **1.30 OBJECTIVES OF THE TESTS**

The Researcher being a volleyball player has found it very easy to test the fundamental skills in volleyball and collected scores in the prescribed norms provided by the foreign made test for the Indian college women .Most of the volleyball tests which have been constructed for the western countries population are not suitably fit to the Indian population .Hence the Research scholar has been motivated to construct two skill tests for measuring the Fundamental in volleyball with the help of experts, coaches, latest literature, and the guide. The Research scholar has finally selected the following two fundamental skills:

Service and Underarm pass that are considered as most important skills in volleyball. Taking into consideration the above factors, the primary objectives of the Research is to construct the new skill Test in service and underarm pass in Volleyball and thereafter compute the norms for the newly constructed skill tests college Men students in Tamilnadu State.

#### **1.31. STATEMENT OF THE PROBLEM**

The primary aim of this study was to construct new skill tests for Service, underarm pass and then to construct norms for the above skills to assess the talents of the college women volleyball players between 18 and 25 years of age of Andhra Pradesh state in India. In India, most of the beginners play volleyball without learning its fundamental skills such as service and underarm pass thoroughly. In the absence of the above elements the game will not be worthwhile for the college men. Therefore, the most important duty of the coaches and the trainers of the game of volleyball is to teach the fundamental skills which are the minimum requirements for the players. When the player has mastered these fundamental skill and the positional play. Keeping all the above said aspects in mind, the research scholar made an honest attempt to construct new volleyball skill tests and compiled the norms for the above said skills for the Andhra Pradesh state college women volleyball players.

### **1.32 HYPOTHESIS**

It was hypothesized that the newly constructed volleyball skill tests such as service and underarm pass may be reliable. The newly constructed volleyball skill tests such as service and underarm pass may be valid. The newly constructed volleyball skill tests such as service and underarm pass may be objective.

### **1.33 SIGNIFICANCE OF THE STUDY**

The study may help to classify the volleyball players' ability on the basis of their performance in service, and underarm pass by using these new norms. The results of this study may help the coaches and physical education teachers to identify the individual proficiency in service, and underarm pass. The Study may help the coaches and physical education teachers to construct a sound training programme for the beginners in volleyball by giving more importance to the service and underarm pass. The study and the computed norm will provide an opportunity to identify the right type of individual to be trained as volleyball players. The finding of this study may contribute to the body of knowledge in the specialized area of tests construction and norms computation. This study would stimulate the interest of the trainees in two skills i.e. service, and underarm pass-through self evaluation of the performance they make. This study may help to provide clear guidelines in selecting potential talents to be groomed for higher level of competition. The results of this study may be helpful to have uniformity in coaching for the beginners throughout the country. This study would further motivate others for further research studies on other skills in volleyball and for norms construction of related skills. The norms construction may be used as a measuring scale for testing the college women volleyball players for any of the selection. This study may be significant in providing feedback mechanism and will add to the critical literature in the field of sports.

### **1.34 DELIMITATIONS**

This study was delimited to the following aspects:

This study was conducted only on the college women, volleyball players of Andhra Pradesh state. This study was conducted only on two skills in volleyball namely service, and underarm pass.

To establish reliability on arbitrary tests, ten inter collegiate women volleyball players were used.

To establish validity of most appropriate test, one hundred and eighty woman volleyball players were selected.

To establish the objectivity of most appropriate test, fifty woman volleyball players were selected.

To construct the norms for the newly constructed tests, Five hundred inter collegiate volleyball women players were selected from Andhra Pradesh. The age of the players was between 18 and 25 years only.

### **1.35 LIMITATIONS**

The external factors like diet, food, lifestyle, climatic conditions and other environmental factors which may have an effect on the results of this study were considered as limitations.

No special motivational techniques were used during the testing which might have had an effect on the results of this study and this was considered as the limitation.

The differences that might exist among the subjects due to varied social, cultural, economical, religious activities and the Participation in the intramural and other physical activities by the subjects were considered as the limitation.

### **1.36 DEFINITION OF TERMS**

#### **TEST**

A test is a specific tool, procedure or technique used to elicit a response from the students in order to gain information to be used as a basis for appraisal of the quality or quantity or elements such as fitness, skill knowledge and values. (*Johnson and Nelson 1986*).

## **NORMS**

“Norms are performance standards based on the scores of a group of people”. (*Hebbel M. Inole and J.Borms ,1974*).

## **VOLLEYBALL**

“Volleyball is the team game that can be played between two teams consisting of six players each side, playing on either side of the court which is divided by a net. The ball is played by batting or hitting with arm over the net .The teams try to score a point by downing the ball in opponent’s court”. (*Gozansky ,1987*).

## **PASS**

The pass is the fundamental skill required for effective team play. The purpose of the pass is to direct the ball to the team setter, who in turn initiates the team’s attack from various zones. There are two types of passes in volleyball. One is overhand pass and other is underhand pass. The, overhead pass is the most preferred pass for the free ball because it provides longer. Contact period on the ball for better accuracy and control .The underhand pass is used to receive the balls which are low and too far for volleying, such as service and opponent’s attack hit. The success of the pass depends on the grip, status of the fingers, and shoulders the elbow position with wrist flip service.

## **SERVICE**

Service is the first act to start a game or a rally. Today, the service becomes an offensive tactics to score a point directly or to disturb the opponent’s receiving capacity. It starts in the toss of the ball in the air and hit or batted by one hand.

## **CRITERION TEST**

This is a test which is an already established one with high correlated reliability, validity, objectivity and the administrative feasibility. (*Johnson and Nelson, 1986*).

## **SKILL**

Skill refers to the level of proficiency in a specific task or limited group of tasks, (*Fleishman, 1964*).

## **SKILL TEST**

It requires an environment similar to the game environment and standardized procedure for administration. The validity of the skill test is judged to some extent on the consistency between testing and performance environment. (*Johnson and Nelson, 1986*)

A circle which is drawn on the plain wall with one meter diameter and five feet seven inches above the base from the floor is considered as wall circle in this study.

## **AGILITY**

It is the ability of human body to change direction quickly and effectively (*Hardball Singh, 1994*).

## **VALIDITY**

Validity is an estimate of the degree to a test measures the factor for which it was designed. (*Basco and Gustafson, 1983*).

## **RELIABILITY**

Objectivity is similar in nature to reliability, except that it applies to the consistency of agreement among scores with respect to the quality or correctness of a performance. This is to say that the scores assigned by different scorers who have completed the same test for a group of subjects will yield high reliability coefficients. (*Ebenezer, 2009*).

## **OBJECTIVITY**

Objectivity is similar in nature to reliability; expect that it applies to the consistency of agreement among scores with respect to the quality or correctness of a performance. This is to say that the scores assigned by different scorers who have completed the same test for a group of subjects will yield high reliability coefficients. (*Ebenezer 2009*).