Chapter -1

Introduction

1.1 Origin of the game

The game Volleyball was invented by William G. Morgan in the year 1895 at YMCA, Holyoke (Massachusetts), USA. Initially Morgan introduced this game by the name “Mintonette”. The game was mainly developed as a competitive recreational game for old people, as it was less violent and less intense. He developed it from his own sports training methods and his practical experience at Y.M.C.A. gymnasium. In early 1896 a conference was organized at the Y.M.C.A. College in Springfield, which brought together all the physical education directors of YMCA, Morgan demonstrated the game with the help of two teams at this conference. In his presentation Morgan said that the objective of the game was to keep the ball moving over a high net, from one side to the other. After watching the demonstration, and listening to the explanation of Morgan, Professor Alfred T. H Alstead called for focusing attention to the action, of the “ball’s fight”, and proposed that the name “Mintonette” be replaced by “Volleyball”, which was accepted by Morgan and the conference. After the conference a committee was appointed to study the rules and give suggestions for the game’s promotion and teaching. A brief report on characteristics and rules of the game were published in 1896, this report was then edited and published as the first official handbook of the North American YMCA athletic league (Reeser, J.C. & Bahr, R., 2003).

In the beginning, the rules of the game were very simple. The main aim was to keep the ball in the air. The rules varied from place to place, players were not rotating, and there was no restriction for net touch, size of ground and number of players dependent on availability of space and players. During the first 20 years there was no promotion of the game.

Worldwide growth

The two professional schools of physical education, Springfield college in Massachusetts and George William college in Chicago adopted Volleyball in all its societies throughout the United States, Canada (in 1900) and also in many other countries like Elwood S. Brown in the Philippines (1910), J.Howard Crocker in China, Franklin H. Brown in Japan (1908), Dr. J. H. Gray in Burma, India, Mexico as well as in South American, European and African Countries. In 1916, the YMCA managed to
induce the powerful National Collegiate Athletic Association (NCAA) to publish its rules and a series of articles, contributing to the rapid growth of Volleyball among young college students. In 1918, the numbers of players per team was limited to six, and in 1922 the maximum number of authorized contacts with the ball was fixed at three. Until the early 1930s Volleyball was for the most parts a game of leisure and recreation, and there were only a few international activities and competitions. There were different rules of the game in various parts of the world; however, National Championships were played in many countries (FIVB, 20009).

As the game gained popularity many National Federations established long term elite Volleyball development programs which were supported by companies, patrons etc. some large National Volleyball Federations financed these programs through publicity and income from competitions. These programs included: professional leadership and management, fund-raising, broad development of children and youth Volleyball and early selection and development of talent, long term training and competition programs, scientific support and research, including up to date high technology, qualification of coaches and officials, sophisticated methods of scouting, match analysis and training control, medical care and nutrition, public relations, etc.. Without long-term programs and professional management, it is impossible for national or club teams to keep up with the top most teams.

To achieve number one position in World Volleyball, one must be a trend- setter. The team must create something new in training and play. To dominate the game one must work hard. By this method international Volleyball has continued to grow over the past 30 years. Nearly all Olympic gold medallist and world champions were trend- setters. Their innovations and peculiarities have improved the standard of International Volleyball during the past three Olympiads.

1.2 Recent Volleyball

One sport that has become most popular on this planet is Volleyball. Worldwide 800 million people participate and play the game at least once a week (Kenny & Gregory, 2006). Usually, in Volleyball, teams are judged based on their ability to win matches (Luhtanen et al., 2001). Reasons for the successful or unsuccessful outcome of the match depend upon a number of factors (Marcelino et al., 2005). Among these, it is possible to measure indicators of the situation, and efficacy of elements or phases
during the match (Marelic, 2005). There are certain characteristic phases that are repeated during a Volleyball match, that is, serve, reception of serve, setting, spike, block, and defence (Selinger & Ackermann-Blount, 1992). These six phases can be disrupted and terminated at any time or it can go into a cycle, alternating offence and defence, one such a complete cycle is called a Rally. At the same point, play will be halted, either by fault or by successful execution of a particular skill (Selinger’s, 1986). These phases determine the skills that each player should possess so as to cope with success with the demands of the match.

1.2.1 Game pattern or phases of Volleyball
In peak performance, the team must have control of the skills to avoid breaking up the sequence while trying to get their opponents to do it. (Palao, Santos & Ureña, 2002) The game Volleyball has a certain pattern of play, which is described in fig. 1. The pattern of play mentions three different phases, which occur during play in a sequence. These phases are known as, complex 1, complex 2, and complex 3.

Complex 1 includes Reception, Set and Attack. Complex 2 includes Serve, Block, Dig, Set and Spike. And complex 3 includes Block Coverage, Set, Spike, Block, Coverage or Dig and Set. The mentioned pattern of play needs control over the skill. To
understand the importance of each skill in play, few researches have been conducted in relation to the significance of these technical elements, contributing to the final outcome of a match, considering the service (Yiannis, 2005) and reception (Florence, 2008), blocking efficiency (Patsiaouras, et.al. 2011) and attack (Tsvika et.al.2008). Spiking and blocking (Palao et al., 2004), spike, serve and block (Marcelino, 2008) service “aces” and counter-attack (Zetou et al., 2007), attack and successful reception of service or the quality of the setter as predictive factors for winning a match (Asterios et al., 2009). These skills are discussed below,

1.2.2 Important Skills in Volleyball

Volleyball is played entirely on the basis of coordination of six fundamental skills. These skills are elaborated below,

1.2.2.1 Serve

The serve is the team’s first attack. It has two primary objectives: to hinder the opponents serve-reception attack by slowing it down, and to score a direct point. A point scored with the serve is called “Ace” (Selinger’s, 1986). Technically, the purpose of the serve is to initiate play, but it is also the means of attack. Only by serving, you can score a point, so it is important to keep the ball in play while at the same time serving aggressively in an attempt to score a point or to force the opponent into a disadvantageous position (Gozansky, 1983).

Serving is the only skill in Volleyball where the individual player is in complete control of the ball. The objective of the serve is minimally to put the ball in play and, maximally, to score a point. The easiest way to score a point is to make the serve difficult to pass (Reynaud, 2011).

The Service is the only skill in Volleyball where an individual player has complete control of the ball. The serve can have three main functions. 1) An attack deployed to score a direct point (ace), 2) An attack to force the opposition to pass poorly and become predictable in turn. 3) A method to get the ball in play (Kus, 2004)

1.2.2.2 Pass

The pass is the first contact with the ball after the service. The main objective of the pass is to direct the ball to the setter in a specific, predetermined target area. The ability of a team to execute an effective attack following serve-reception depends largely on
the accuracy and quality of the pass. If the pass is not precise, then the setter’s options are reduced, creating an attack that is slow and predictable (Selinger’s, 1986).

The pass is the fundamental skill required for effective team play and must be mastered before any other skills can be successfully utilized in the game. The purpose of pass is to direct the ball to the team’s setter who initiates the offence (Gozansky, 1983).

Passing is used in its many variations to receive serves. Passing is one of the most important skills in Volleyball and is a key to whether a team is successful. Successful passers have good vision, moment and they eye-hand their teammates before and during the play (Reynaud, 2011).

1.2.2.3 Set
The set is a ball that is directed with a precise trajectory and speed to a particular hitter so that he can effectively attack it. The set is usually, but not necessarily, the second attack with the ball by a player, following a pass or a dig (Selinger’s, 1986).

The purpose of the set is to place the ball in a position in which your offense can attack the ball. A setter’s first priority is accuracy with respect to height and placement to help the hitter to be consistent. A second priority is combining this accuracy with the ability to make the proper decision regarding whom to set, the type of set, and to do it quickly and deceptively (Gozansky, 1983).

1.2.2.4 Attack
Attack is a general term that encompasses the collective offensive efforts of a team as well as the individual effective efforts of a player to score a point (Selinger’s, 1986).

The attack is the primary offensive weapon and its purpose is to score a point. The attack encompasses a variety of options (Gozansky, 1983).

The attacking is also called a spike or hit, and is the most popular and exciting skill in the sport of Volleyball. It is a very difficult skill in which the player jumps in the air to hit the moving ball over the net while avoiding the opposing blockers (Reynaud, 2011).

1.2.2.5 Block
The block is a team’s first line of defense. Blocking is a very explosive and dramatic maneuver that serves several functions. The primary function of the block is to intercept an attacked ball, either by returning it to the opponent’s court for a point or side out or deflecting the ball upward and back to the court defense. Another important
function of the block is to screen certain area of the court, influencing the direction of the opponent’s attack and thus reducing the court area that the floor defense must cover. Without the screening that the block provides, the floor defense can only guess where the attack will be aimed and will have far less success digging the ball. A consistently effective block can also be a formidable intimation factor; if blocked repeatedly, the hitter loses confidence and becomes prone to make errors (Selinger’s, 1986). The block is the first line of defense. The primary purpose of the block is to stop the ball and return it to the opponent’s side for an immediate point or side out. Secondary purpose is to force the opponents to attack the ball into an area of the court that you are prepared to defend (Gozansky, 1983). It is first line of defense in Volleyball – It is the act of jumping up and placing the hands above and over the net to keep the ball on the opposing team’s side of the court. (Reynaud, 2011).

“Blocking takes away a hitter’s best shot or takes away the court space”.
The primary goal of blocking is to redirect the opponent’s attack back onto their court floor, and to slow down, weaken or change an attack towards the best diggers (Kus, 2004).

1.2.2.6 Dig
The first line of defense is the block and second is floor defense; the two are deeply interrelated. The block responds to the opponent’s attack and block. The primary purpose of the floor defense is to dig an attacked ball that penetrates or passes the block, and redirect it to the primary target (Selinger’s, 1986).
Second line of defense is the dig. Once the ball passes the block the team has a second opportunity to keep the ball in play (Gozansky, 1983).
Dig is an individual defensive skill performed by a player to deflect the ball up off the player’s forearms. The defensive player will read the other player, will position herself/himself around the blocker’s, and prepare to keep the ball hit by an attacker off the floor (Reynaud, 2011).

The above mentioned six skills play an important role in the game of Volleyball. The ultimate aim of performance is to achieve success in a competition, which can be fulfilled only through the finest and dominative execution of these skills which are based fully on performance parameters.
1.3 Sports Performance

“Sports performance is the unity of execution and result of sports action or a complex sequence of actions measured or evaluated according to socially determined and agreed norms”. (Hardayal, 1991)

![Diagram of Sports Performance](image)

Fig. 1.2: Structure of Sports Performance (adapted from Singh Hardayal, 1998)

It is mentioned in the literature that, an athlete’s performance during a game is the ultimate product of all performance factors. These factors can be assessed independently as well as combined together to find out the contributory effect on the overall performance. The sports performance includes five major factors namely, constitution, condition, technique/coordination, tactics and personality as per reviewed literature, which is reflected in fig.1.2.

Performance Evaluation in Volleyball

Performance is a product of the process running through various factors. These factors belong to the various sections, like Genetics, conditioning, psychological, technical, and tactical, medicines and so on. Therefore assessing all these factors is not very convenient during the play. There are numbers of skill tests available in the field of Volleyball. Brady’s developed Volleyball skill test to measure general Volleyball playing ability of college men, AAPHER Volleyball skill developed to measure volleying, serving, passing and set up skill of the game Russell and Lange Volleyball skill test developed to measure one’s Volleyball plating ability, SAI Volleyball skills test developed to measure Volleyball skill in defined age group for the purpose of talent
identification, it manly measures, accuracy of service, control on volley pass and general throwing ability of potential Volleyball player (SAI,1992), Brumbach Volleyball test developed to measure one’s ability to serve the ball low and deep inside the court, NCSU Volleyball skill test developed to measure efficiency in serve, forearm pass and set of male and female (Kansal, 1996),

But all these tests measure only the skills, accuracy or efficiency. These tests are not enough to evaluate player’s performance during play. Because these tests are not influenced by external factors like, physiological (geographical adaptation capacity), environmental (opponents, audiences), psychological (stress, anxiety, decision making, game pressure), technical (knowledge and mastery over skill), tactical (technical and tactical aspect of play) and experience of competition. These tests are completely independent tests and are based only on the player's mastery over that particular skill. To construct such an evaluation test or criteria which may cover all these factors is challenging and hardly possible during play. Therefore, performance evaluation rating scale or performance analysis software are the means to fulfil the need of evaluating the performance given by the player during the actual game, because as discuss in literature rating scale is a device for obtaining judgments of the degree to which an individual possesses certain behavioural traits and attributes not readily detectable by objective tests (Dhandekar, W. N., 1999).

Rating Scales
Ratings are any kind of coding (qualitative or quantitative) made concerning attitudes, behaviours, or cognitions (Barrett, 2001). The rating scale is a measure of behaviour that involves a subjective evaluation based on a checklist of criteria (Thomas, J.R., et.al. 2005).

Types of Rating Scale
There are main four types of rating scale given in literature, as a) numerical rating scale, b) Graphic rating scale, c) descriptive graphic rating scale, d) ranking method.

a) Numerical Rating Scale: one of the simplest types of rating scales is that where the rater checks or circles a number to indicate the degree to which a characteristic are present. Typically, each of a series of numbers is given a verbal description which remains constant from one characteristic to another. The numerical rating scale is useful when the characteristics or qualities to be rated can be classified into a limited numbers
of categories and when there is a general agreement concerning the categories represented by each number.

b) Graphic rating scale: In Graphic rating scale each characteristic is followed by a horizontal line. The raters evaluation is indicated by placing a check or cross on a line to indicate the presence or absence of a given traits. Various categories of marked on the line, but the rater is free to check between these points if he so desires. The use of single words such as never, frequently, always etc., to identify the various categories has no great advantage over the use of numbers used in the previous type. There is little agreement among raters concerning the meaning of such a term as occasionally and frequently. What is needed is a behaviour description which indicates more specifically the presence or absence factor.

c) Descriptive graphic rating scale: This rating form uses descriptive phases to identify the points on a graphic scale. The descriptions convey in behavior terms what the individuals are like at different sports along the scale.

d) Ranking method: some rating procedures do not require a printed scale. Probably the most applicable and best known of these is the simple rank order method. With this approach, the pupils (or product) being rated are merely ranked in the other in which the rater estimates they possess the characteristics being judged. Rating made by a numbers of judges may then be combined into a composite or average rank. A practical modification of as usual ranking method requires the rater to sort the pupil into a given number of groups on the basis of overall quality and then letter grades such as A,B,C,D and E are assigned to these groups.

1.4 Need to develop Rating Scale in Volleyball

As mentioned in the literature the game has seen several transformations since its beginning. Initially the game was played by using the “Side out System”, where the duration of the game was increased, in case the serving team was not dominating the rally, the score would not increase and service would keep changing without an increase in the score. Hence, to reduce the match duration and make the game more attractive “Rally Point System” was introduced. Due to rally point system the game became more powerful, rapid and attractive for spectators, but with this, the risk also increased (FIVB, 2009). This has correspondingly increased the pressure on a player, both physical as well as psychological. Thus, it becomes imperative to identify robust players who can deliver under peak pressure. An increase in the risk factor has also led
to increase in the performance of each player for the entire duration of the game. This in turn has made the performance evaluation difficult by “Open or Free Observation”. Therefore the requirement of specific criteria based performance evaluation software or manual evaluation systems were necessitated. A number of evaluation and analysis tools in Volleyball have been developed as a result of various research studies. However most of them pertain to analysis or quantification of individual skills only.

Mortensen, developed a notational analysis system to evaluate setting performance in Volleyball. The aim of this study was to find out the probabilities of specific outcomes from each setting scenario. Out of 25 different setting scenarios, sets within 3-5 feet from the net resulted in the highest probability of a point and the lowest probability of a point for the opponent. Low sets, whether inside or outside in relation to the hitter also resulted in a high probability of winning a point. High sets, whether inside or outside in relation to the hitter, resulted in the lowest probability of success and the highest probability of a point for the opponent (Mortensen, 2007). Carine Constructed and validated a technical-tactical performance evaluation instrument in Volleyball. This instrument evaluated the different components of technical and tactical aspects. This permits the identification of the general performance level of each player, as well as specific performance, according to action and components (Carine, 2011). Bergeles examine the dependence of performance effectiveness in Complex II. Performance of sequential actions of set-to-counter-attack was assessed based on a 5-point numerical rating scale by a 3-member group of expert coaches. In their examination, it had been observed that the higher the performance effectiveness of setters influences positively, the higher performance effectiveness of attackers (Bergeles, 2010). Florence contributed his study on skill evaluation in women's Volleyball. He studied the Brigham Young University Women's Volleyball Team where he recorded and rated all the skills (pass, set, attack, etc.) There were three events taken into consideration. Events followed one of these general patterns: serve-outcome, pass-set-attack-outcome, or block-dig-set-attack-outcome (Florence, 2008). Many such studies worked on individual Volleyball skills or on different pattern outcomes. But very few studies worked on development of a rating scale to evaluate complete performance of the players during a Volleyball game.
Performance evaluation and analysis is the most important process for improving the standard of any game and a substantial amount of work has gone in developing software by a number of federations, based on the experience of various coaches and veterans from the field of Volleyball. The existing software in use is Data Volley, Volleyscout, and VIS.

Data Volley provides detailed analysis of the performance, so that one can scout all the situations taking place during the play. It analyses, skill performance as per the zone, direction, trajectory of the ball, type of execution and so on. This software is mostly used by all National teams, but financially it is unaffordable at the lower level (DataVolley, 2007). Volleyscout Player, software is available in the market for evaluation of performance during the match. It is easy to handle both on a P.C. As well as on android based mobiles. However, this cannot be used manually for performance analysis (Volleyscout Player, 2007). VIS was developed by FIVB to generate statistics at FIVB based events including World Championship and Beach events. VIS is very good software to generate statistical data to provide information to the media and participants, about competition, individual player's performance and teams’ performance in each skill as well as in overall skills. It uses a three point rating scale, in which, skills are divided into two categories viz. Scoring and non-scoring. Scoring skills are those skills, which score a direct point like, Serve, Attack and Block whereas non-scoring skill supports the scoring skills to score a point, like Pass, Set and Dig. VIS is a three point rating scale, which evaluates the scoring skills, as Success, Normal and Fault, and non-scoring skill as Excellent, Normal and Fault.

The criteria mentioned in VIS to award the points are as below,

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Scoring Skills</th>
<th>Non-Scoring Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Criteria</td>
<td>Grade</td>
</tr>
<tr>
<td>1</td>
<td>Gain Score</td>
<td>Success</td>
</tr>
<tr>
<td>2</td>
<td>Attempt</td>
<td>Normal</td>
</tr>
<tr>
<td>3</td>
<td>Lose Score</td>
<td>Fault</td>
</tr>
</tbody>
</table>

The Success/Excellent is awarded with point 3, Normal is awarded with point 2 and Fault is awarded with point 1. This criterion indicates that, in scoring skills like Serve, Attack and Block if the player succeeds to score a point then he/she will be awarded
with 3 points as top most performance. And if the player loses a point then he/she will be awarded with 1 point as most poor performance. But if the player’s performance does not lead to score or lose a point, then all such actions are considered as an attempt or normal play.

All the above discussed performance evaluation existing systems and software are in use more or less by various countries to evaluate or analyse their team and player performance. Among them VIS is one of the most popular and friendly software which is used by almost all Volleyball federations. It is also very sparingly used by Indians. But as discussed earlier VIS is good software for the purpose of generating data for the media. The structure of the VIS is as shown in figure 1.3.

**Volleyball Information System**

![Fig. 1.3 VIS Three Point Rating Scale.](image)

The aforesaid systems have not been applied at the State or National levels in India. The method of Open Observation is still the main tool employed for evaluating the team performance, but the same is not based on any specific criteria and does not cover all aspects of evaluation. Hence there is a requirement to develop a special performance evaluation criteria pertaining to the Indian population.

Therefore the researcher mainly decided to develop new performance evaluation rating scale based on the criteria used by VIS. The Scholar focused on this problem because as per the reviews Performance evaluation and analysis is done both manually and through software aided systems. However, there are no tools which exist for detailed manual evaluation of all skills simultaneously, particularly in the Indian context.
1.5 New approach to Rate the Performance in Action
The game Volleyball requires more specific input in terms of the evaluation of the actions performed during the live match situation. VIS system rates the performance in term of the outcome which does not provide adequate and specific information on each action performance. Hence, a system needs to be developed wherein such detailed and specific evaluation feedback is obtained. This would help in pinpointing the strengths and weakness of a player, while at the same time it would help for scouting and talent identification process.

The researcher has worked in the field has been a player too for 10 years. After reviewing the existing system, the research has opinion that a new approach in performance evaluation be developed, especially in the Indian context.

It is felt that the foundation of the new approach would be based on the VIS criteria, but, each criteria would further be detailed and modified. So, as to evaluate the action of during the live match performance. The fig. 1.3 below gives an explanation for the same.

![Proposed Rating Scale](image)

**Fig. 1.4 Proposed Rating Scale (PRS).**

1.6. Statement of the Problem
Volleyball is a very powerful game, which requires specific physical structure, conditioning, technical skill, tactical efficiency, athlete experience, appropriate training program and **match performance evaluation system**. Of all these, Performance evaluation system, especially players' performance during live match plays a vital role in ensuring a consistent performance by a team or player. The success of a game
depends on the effective application of individual skills of a player in enhancing the team effort, taking into consideration the situational realities like, audience influence, physical fitness efficiency, coordination with teammates, influence of opponents, venue of competition and much more. Therefore, there is a dire need to focus on the following: -

- **Present System of Evaluation**
  In India performance evaluation is based on the Open or Free observation system. It is mainly dependent on the experience of a coach and it varies from person to person, thus it lacks uniformity of evaluation and is prone to human error as the entire process is not based on any specific criteria. There are a few performance evaluation software available to do a performance evaluation of an athlete during play, but they are very expensive and unaffordable.

- **The New Approach**
  Keeping in view the above mentioned problems, the investigator had a keen interest in developing such an evaluation method which would be helpful at all levels of the selection process. This evaluation method would evaluate the effect of action produced by athlete while facing different situations during the game. These situations are as given below: -
  
  - Evaluating the game performance of an athlete playing against different opponents (Against strong opponents, equal opponents and weak opponents).
  - Evaluating the game performance of an athlete using different types of strategies.
  - Evaluating the game performance of an athlete under the influence of different types of audience.
  - Evaluating the game performance of an athlete under no pressure situation, such as soft caching.
  - Evaluating the game performance of an athlete under pressure situation, such as hard coaching.
  - Evaluating the game performance of an athlete in different places and different climates.

Considering all the above factors the investigator has selected this problem for study. The problem is stated as below

“Development of Performance Evaluation System in Volleyball”
1.7. Significance of the Study.

The study would make the following contribution;

- It would help the coaches in the process of talent identification.
- It would help the coaches to determine the player’s abilities.
- This study would help the coaches to keep control of the training process.
- The study would help to plan the strategy for future competitions, particularly on scouting basis.
- The study would help coaches to get feedback during the bench coaching and to make necessary changes to maintain match tempo.
- The study would help player’s to understand their strengths and weaknesses for necessary improvement.
- It is a potential rating scale for the Analysis of Strengths and Weaknesses.

1.8. Objectives of the Study

The study set the following objectives for its study

1. To design Performance Evaluation Rating Scale in Volleyball (PRS).
2. To establish Validity of the Performance Evaluation Rating Scale in Volleyball.
5. To verify administrability of the Performance Evaluation tool with Notational System on live match in Volleyball.

1.9. Assumptions

- Volleyball Federation of India and Senior National Volleyball Championship organizing association will cooperate to collect sample of the study.
- All players will give a true performance during competition.
- Experts of the study will evaluate the sample matches as per the criteria mentioned in proposed rating scale.
- Experts of video recording, will record the sample matches accurately.
• All the subjects are of senior category players and hence are knowledgeable about technical and tactical movements.

1.10. Delimitations of the Study

1. The Study was delimited to the following Volleyball Skills only.

A. Volleyball Scoring Skills:
• Service
• Attack
• Block

B. Volleyball Non-Scoring Skills
• Pass / Reception
• Set
• Dig.

2. The Study was delimited to match condition viz Volleyball Federation of India (VFI’s) Volleyball Senior National Championship 2010. (Live match video recording)

3. The Study was delimited to match referee's decision during the match.

4. The Study was delimited to Senior Male Volleyball elite Players.

1.11. Limitations of the Study

The following limitations of the study are the conditions which are beyond the control of the researcher.

• The player’s playing experience was considered as a limitation of the study.
• Match conditions were a limitation of the study (injuries, environment).
• Socioeconomic conditions of the athlete was a limitation of the study.
• The playing Standard of the Team was considered as a limitation of the Study

1.12. Operational Definitions

• System: A set of rating scale for scoring and non scoring skills in Volleyball.
• Proposed Rating Scale (PRS): the scale which will be develop by the researcher to evaluate skill performance in Volleyball.
• **Performance Evaluation:** Evaluation of effects of action executed by the player during an actual Volleyball match is considered as performance evaluation.

• **Competition:** Senior National Volleyball Championship of 2010 conducted by the Volley Ball Federation of India is referred as competition for the study.

• **Scoring Skills:** These are those skills in Volleyball which help in gaining a point.

• **Service:** Service is the first contact of rally in Volleyball which is executed from and behind the end line into the opponent’s court by tossing and hitting the ball in the air.

• **Attack:** Attack is an offensive skill in Volleyball which is executed in air by jumping and hitting the ball directed towards the opponent’s court with an intension to disturb their defence and score a point.

• **Block:** Blocking is a defensive skill in Volleyball which is executed in the air above the exact net, where both sides of players get involved to dominate the rally. The block is performed to reduce the speed of incoming ball or to make the ball dead in the opponents’ court.

• **Non Scoring Skills:** Non-Scoring Skills are those skills in Volleyball which indirectly support to earn the score.

• **Serve Reception:** It is that particular phase of the game of Volleyball when a player receives a service coming from the opponent.

• **Set:** The set in Volleyball is a ball that is directed with a precise trajectory and speed to a particular attacker with an intention that the attacker can effectively attack on it.

• **Floor Defense:** floor defense in Volleyball is also considered as aDig. Dig considers any ball played except serve reception with underarm or over arm, technique against attack, block.
Reference


