Chapter II

REVIEW OF RELATED LITERATURE
CHAPTER II

REVIEW OF LITERATURE

The review of literature is the basis of any research project in Physical Education. A study of related literature in general implies locating, regarding and evaluating reports of several research findings as well as reports of observations and opinions that are related to the individual’s planned research report. It will give the scholar a thorough understanding of the previous work that has been done. The review provides an opportunity for the investigator to understand the tools used in the selection of subjects, procedure and statistical techniques used by other research scholars. Without doubt such a study of relevant literature is an important step to get a complete picture of what has been done with regard to the problem under investigation.

The research scholar has made every possible effort to go thorough the literatures related to the problem in the game of soccer wherever available. The scholar has gleaned through almost every source like Research Quarterly, journals of various kinds, periodicals, encyclopedias, relevant book and websites of soccer and other games to pick up related material. While going through the various sources of literature, it has been observed that very little work has been done on specific skill tests related to the game of soccer. However, the scholar also has gone through the
literatures of allied studies that are related to other games and sports to collect the necessary information for making a proper shape of the study.

A brief review of the studies related to the present study is given under the following two headings:

1. Studies related to soccer
2. Studies related to other games

**STUDIES RELATED TO SOCCER**

Kshetrimayum Tatan Singh (2002) constructed a soccer playing ability test. 108 soccer players, with age ranging between 15 to 19 years, who were adopted by Sports Authority of India (SAI) at different hostels of eastern and north eastern regions of India. The study was conducted only for male players. The playing ability of those players were judged by three experts while they were participating in the “Gajen kumai Memorial Inter-SAI scheme football tournament. The data collected from 108 players were subjected to various statistical analyses, such as Descriptive Analysis, Pearson’s Product Moment and Factor Analysis. Finally, for the development of Norm, the Hull Scale technique was used and overall performance (playing ability) scores were interpreted by developing a grading scale based on the 6-Sigma Scale.
The following test items were selected for the soccer playing ability
Test battery.

01. WM Dribbling
02. Receiving a bouncing ball with the sole of the foot
03. Repeated wall rebounds (5 feet)
04. Dribbling and Kicking for distance
05. 30 Yard dribbling
06. Dribbling and ground pass (15 yds)
07. Shooting a stationary ball in the goal (25 yds)
08. Heading for accuracy (12 Yds)
09. Aerial pass of a stationary ball (20 yds)

**Kansal (1996)** described a football skill test in his book, “Test and Measurement in Sports and Physical Education”. The test was developed by Sports Authority of India (1992) known as SAI Football Skill Test. This test is used by SAI for spotting talented football players at a young age and consists of the following three test items:

01. 30 Mts. running with the ball
02. Kicking for accuracy
03. Juggling

**Bhattacharya (1984)** constructed an objective skill test battery in soccer for professional students of physical education. The subjects were
130 men students of Bachelor of Physical Education. The test battery consisted of 4 items, namely kicking for distance, kicking for accuracy, heading for distance and dribbling the ball. The reliability of 0.96, 0.92, and 0.92 was obtained for the above test items respectively. The validity co-efficient obtained was 0.94.

Mor and Christian (1979) developed a skill test battery to measure the general soccer ability. Forty-five male college students participated in this study. They were classified into three groups - varsity team players, intramural divisional championship players and physical education soccer class players.

Five tests were investigated in this study. The three test items namely dribbling, passing and shooting together made up a battery with acceptable reliability and validity, and the other two tests required special equipment that would rarely be found in schools and added little to the overall battery. The criterion measure was rating scale developed and used by three soccer experts. Each subject was evaluated during actual matches played. Each test was correlated with criterion measure. The co-efficients obtained were dribbling 0.731 passing 0.776; and shooting 0.912. Using the test retest method, the reliability coefficients were dribbling 0.795; passing 0.961 and shooting 0.984. The objectivity coefficients were, dribbling 0.998; passing 1.0; and shooting 0.999. A multiple correlation analysis was used to select
the test battery. The following multiple correlation coefficients were obtained for the various test battery combinations, passing 0.776; passing + dribbling 0.790; and passing + shooting, 0.913.

Jean Bontz (1978) constructed some skill test items of soccer to measure the important skills of dribbling, passing and trapping. If one has the time and space, this would make an excellent second test. The test was administered to 125 fifth and sixth grade children from two school systems yielding reliability co-efficient of 0.33 by the odd –even method. The validity coefficients were 0.92 for one group of 92 subjects and 0.53 for the remaining 32 subjects with a criterion subjective rating.

McDavid (1977) constructed a battery for predicting athletic potential among football players. 67 football players were selected as subjects. The test battery consisted of motor ability items as well as football skill items (McIay’s Classification Index, strength, power, time to hit audio-visual, agility, speed, work to output). Substantial correlations were obtained between most test items and the test criterion. The sum of ‘t’ scored, size as depicted by McIay’s Classification Index (C.I) had a negative non-significant correlation with the criterion. The discriminative power of the battery was evinced by the highly significant correlation between the test criterion and the coaching staff’s ranking of individual players (rho = 0.840).
It was concluded that athletic potential in football could be predicted by testing.

**Mildred Vanderhoof (1974)** described an early and inclusive test of soccer skill for girls, which, while not scientifically devised, covered important elements of soccer including dribble, trapping, place kick for accuracy, dropped ball kick for distance, volley for distance, throw-down (securing ball from opponent within a six-yard circle), tackling, corner kick and goalkeeper's test. The test description includes a suggested scoring graph to facilitate analyzing an individual's ability and to afford the basis for assigning team positions.

**Kovacs (1973)** evaluated the "Bounce-Drill Soccer Test" which is known as McDonal's Soccer Test. The purpose of the study was to measure the general soccer ability. He used both McDonald kicking skill test and Judges' ratings as criteria with the assistance of 38 soccer players comprising members of a freshmen soccer team, varsity team and first grade professional players.

The reliability, figured on the split-Halves method, was 0.97 for the total group, 0.94 for varsity groups and 0.95 for the freshmen group. The test is more valid for the freshmen level players than varsity level players. Reliability, however, is high for both the groups. The use of this test is to consider with other measures to assess overall playing ability and
improvements, to motivate students as they practise this skill unique to soccer.

Mackenzie (1969) has conducted a study on the evaluation of a battery of soccer skill tests as an aid to classification of general soccer ability. 38 subjects from general physical education classes and 10 subjects from a varsity soccer team were selected. Each subject was tested and evaluated by five judges on his ability to perform the skills of trapping, dribbling and kicking a lateral moving ball, in addition to the Mcdonald Kickboard Test. The data were processed using the Sillie Stepwise Multivariate Regression. Formulas were determined which explained 68.97% of the variability as seen by the experts, and, when used with the data in the range of this study, they presented a result useful on the 1-100 points scale of general soccer ability.

Crew (1968) related several soccer skills to the soccer ability for college men. The criterion of soccer ability consisted of the opinions of competent judges formed during competitive play. Correlation of test items with this criterion was 0.96 for ball control, 0.95 for aerial accuracy, 0.92 for dribbling and 0.88 for wall volley. A multiple correlation of 0.97 was reported with the ball control and dribbling test.

Crawford (1963) constructed a battery of soccer skill tests yielding a multiple correlation of 0.80 with the criterion of judge’s rating by using
30 women majors in physical education. The tests are –(i) dribbling, (2) foot passing and receiving, and (3) passing and trapping. The respective coefficients for validity and estimated reliability from split half correlations were –(1) 0.73,0.89;(2)0.58,0.84;and (3)0.45,0.88. As noted, the best single test was the dribble test. The multiple regression equation for the battery was: 1.5 test1+test2+1.8 test 3-132.

Annarino (1962) compared the two methods of soccer instruction. The measure of initial and final status in soccer skill ability and soccer knowledge were obtained for each student in the drill and game methods by administering a standardized soccer knowledge test for college men and a four item soccer skill battery (volley, dribble, heading and distance kick). No significant differences were found between the final measures for the game and drill groups in terms of soccer skill and knowledge except for heading ability. The game group was superior to the drill group in terms of heading ability. A correlation of 0.627 was found between the subjective and objective estimates of soccer ability. The correlation between the results of the objective test of soccer skill and objective test for soccer knowledge was insignificant.

Mc Donald (1951) studied the use of volleying a soccer ball against a backboard as a test of general soccer ability. With college men as subjects, he obtained the following correlations between scores on the test and the
ratings of playing ability by their coaches: 0.94 for varsity players, 0.63 for junior varsity players, 0.76 for freshmen varsity players, and 0.85 for the combined groups.

G.H. Warner (1950) developed a test of soccer skills. The purpose of the study was to measure the fundamental skills of soccer. The study was designed for junior and senior high school boys and for high school varsity soccer players. Soccer coaches, who rated them according to their importance and the degree of difficulty to learn, evaluated the test items. The test includes the following items:

1. Kicking for distance (right foot)
2. Kicking for distance (left foot)
3. Corner kicking for accuracy
4. Heading for accuracy
5. Throw-in for distance
6. Penalty kick for accuracy
7. Dribbling for time

The uses of the tests were to help in the grading procedures, to increase interest in the activity by reporting quickly and to help the beginner see that skill with both the feet should be developed.
Nelson and Cozens (1934) described four soccer tests – dribble, kick for distance, place kick for accuracy, and throw-in for distance – and complete achievement scales were developed for boys and girls in elementary and junior high school.

M.L. Health and Elizabeth (1932) The first scientifically devised soccer skill test was constructed by Health and Rodgers for fifth and sixth grade boys and girls based on teacher analysis of the game. The test items include (1) dribble-over a course of four chairs spaced on a line three yards apart; (2) throw-in - ten trials to 2 and 4- foot diameter target centred six yards away; (3) place for kick for goal – ten trials from twelve yards and (4) kicking and rolling ball –five trials on ball rolled from each side of goal. T-scales are available for 5th and 6th grade boys. Coefficients of 0.60 and 0.62 for the two grades were obtained with teacher judgment. Reliability was reported as 0.72 to 0.74 for composite scores.

Yeagley (1972) constructed a test battery for measuring basic soccer skills for beginners. Four test items were selected namely, dribble, wall volley, juggling and heading. The validity of each of the four test items was examined with two different criteria: (1) the ratings of four judges on the soccer juggling skill and (2) the composite standard score of the four tests. A multiple correlation of 0.76 was reported between the criterion (the judges ratings) and the dribble and juggling tests. The addition of the wall
volley and heading tests increased the multiple correlation to only 0.78 and thus recommended that dribble and juggling be used if a short form is wanted. With a sample of male physical education majors who were beginning soccer players, the following internal-consistency coefficient were reported as dribble 0.91, wall volley 0.90, juggling 0.95 and heading 0.64.

STUDIES RELATED TO OTHER GAMES

Baskaran (2001) constructed a volleyball skill test and computed norms for school boys of different age groups in Pondicherry State. One thousand five hundred and five (1505) male school students in each group of 13 to 15 years were selected as subjects. All the subjects were selected from 7th, 8th, 9th, and 10th, classes in each school. For the construction of new skill tests, the investigator selected pass and service skills. The criterion tests were the Brumbach forearm (under arm) pass volley test and Glady’s Scot and Easther Frenche’s service placement test. Two new skill tests were designed with suitable court markings for the new service skill test and for the underhand skill test. The reliability, validity and objectivity of the new skill tests were established. Thereafter norms were compiled for the newly constructed tests for each skill and for each age group. To construct norm, Hull scale statistical technique was employed. It was found out that the newly constructed service skill tests were good and consistent. As per the qualitative grading in the pass skill, out of 1505 subjects, 73 fell in the
failing category, 194 were below average, 554 average, 483 above average, 180 good and 21 outstanding. In the service skill, as per the qualitative grading it was found out that out of 1505 subjects 86 fell in the failing category, 170 below average, 543 average, 522 above average, 138 good and 46 outstanding.

**Dr. Pichaiappa (1999).** A study was conducted to construct norms for the predicted fundamental volleyball skills for school boys in Tamil Nadu in the age groups of 16, 17 and 18 years. Initially 100 volleyball players in each age group, who participated in the inter school competition, were selected as the subjects for prediction. The following variables namely underhand pass, overhead pass, spiking, serving, setting, blocking and playing ability were chosen as the variables. Wherry Do Little method of variable selection and multiple correlation were used for selection of variables and prediction. Data from 2000 volleyball players were collected in each group for the construction of norms on the predicted skills. Mean, standard deviation and hull scale were the statistical techniques used. The following results were obtained. Among all the skill variables analyzed, service and underhand pass were found to be significantly related to volleyball playing ability for all these 16, 17 and 18 years of age groups. Spiking was found significantly related to volleyball playing ability for 16 and 17 years age groups. Setting was found significantly related to volleyball...
playing ability for 16 and 18 years age groups. Overhead pass and blocking were found to be significantly related to volleyball playing ability for only age groups of 17 and 18 respectively. On the basis of hull scale quantitative grading for the different age groups was computed.

Yilla & Sherrill (1998) validated the Beck battery of quad rugby skill tests. The purpose was to develop a valid and reliable battery of quad rugby skill tests. Participants were 65 adult male, quad rugby athletes. Construct validity was established in two modified Delphi rounds by a panel of international experts. For Concurrent validity, Spearman rho correlation between coaches’ rankings of players’ skills and scores ranged from 0.63 to 0.98 for the total battery. For construct validity, principal factor analysis with oblique rotation revealed two factors. Inter-class reliability co-efficient ranged from 0.94 to 0.99. The battery includes five tests, manoeuvrability with the ball, pass for accuracy, picking, sprinting and pass for distance.

K. Chandrasekaran (1997) constructed a basketball skill test Battery for Tamilnadu School boys of fourteen to sixteen years. 156 male basketball players who represented their division were the subjects. The preliminary test package included eighteen test items under the five fundamental skills. The playing ability of each subject was determined by subjective ratings during the competition. The prime intention of the researcher was to construct a comprehensive module with limited number of
test items and greater level of dependability. The following five tests were found to be highly reliable and fully valid final test battery which yielded a high level validity score, 0.972.

1. Different spot shot
2. Pace dribble
3. Star defensive movement
4. Zigzag lay-up shot
5. Moving pass

Sabharwal (1991) study was a criterion for the selection of Basketball Players on the basis of skill performance for inter-collegiate basketball men players of Jiwaji University. The subjects were 38 men players in the age group between 18 and 25 years. The test battery consisted of eight items namely field goal speed test, basketball throw for accuracy, dribble, three points shooting, rebounding, defensive shuffle, dribbling cum lay-up shooting, and reverse dribble. Basketball playing ability was judged by a panel of three judges during an Inter-collegiate Basketball Championship. The scale was between one to fifty. All the test items were significantly correlated with the judge’s rating. In the order of their high magnitude, three tests were selected to develop the test battery. The multiple correlation coefficient was computed between criterion variable and independent variable and it was 0.82. Reliability coefficient of the different test items of
basketball skill test battery was established. For Field goal speed test, it was 0.92, for three points shooting 0.93 and for dribbling and lay-up shooting 0.91. Validity was established. The raw scores of finally selected skill test items were converted into standard scores (Z scores). The standard scores for each subject for all the three items were added to obtain composite score. It was correlated with basketball playing ability scores. The validity coefficient was 0.91. Different test items of validity were calculated. Field goal speed test was 0.90, three points shooting was 0.91 and dribbling and lay up shooting were 0.92. Norms were developed on the basis of normal curve.

Green East and Hensley (1987) developed a 4-item Golf Skills Test Battery for college males and females. The components, initially identified for the test battery, were the short putt, long putt, chip shot, pitch shot, middle distance shot and the drive. The final battery included four items viz. middle distance shot, pitch shot, long-putt and chip shot. In this study the attributes were selected based on a conceptual analysis of the game of golf. The skill measures were developed and then analyzed using a multiple linear regression model to determine the relative contribution of each measure to golf playing ability. From the study it was revealed that by using the regression model with several predictor measures, the size of the validity coefficient may be significantly increased. The regression analysis approach
to skill test development serves two functions. First, it functioned as a method of establishing a concurrent validity coefficient for the test battery. Second, it delimited the skill components to those that accounted for the greatest proportion of explained variance. The use of a multiple regression approach also provided a certain degree of flexibility to potential test users by enabling them to select subtests of the complete battery. The study revealed that an instructor may select a combination of test items that is best suited to a specific situation, considering the limitations such as time, equipment, and personnel. An instructor may select a combination of test items that is best suited to a specific situation. In such cases the multiple R still provides evidence of the validity for this combination of test items. For the Green Golf Test, the highest simple correlation between any single test item and the 36 hole criterion score was 66. However, various combinations of test items yielded validity coefficients as follows: 0.72 for middle distance and pitch shot, 0.76 for middle distance shot, pitch shot, and long putt and 0.77 for the middle distance shot, chip shot, pitch shot, and long putt.

Kenneth (1987) Golf Skill Test Battery for college males and females was administered to over 1,000 college students of varying ability levels. It was used predominantly with students enrolled at the starting level of golf classes. Reliability was determined for each of the test items using the intra-class correlation method. A group of 146 subjects were administered each
item of the test battery on two separate days near the conclusion of a one semester starting level of golf class. The reliability co-efficient were calculated for a criterion score which was based on the sum of the trials for each test item.

Clarke and Clarke (1987) refer to the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) Basketball Skills Tests, in which four skills, Speed Spot Shooting, Accuracy Speed Passing, Control Dribble, and Defensive Movement are included. The tests were done to assess the Basketball playing ability of boys and girls of all ages from ten to seventeen years and in college. Twelve test items were devised to evaluate the four essential skills. A pilot study on twelve test items was carried out to determine the administrative feasibility of the test and to provide estimates of their reliability and validity. From a preliminary six-item battery, a four-item model was selected, and by intra-class correlation and multiple correlation methods, their reliability and validity estimates were affirmed. The interclass reliability of the four items for each sex and at each school level was .90 and above. For validity estimates, multiple correlation was determined between subjective ratings of basketball playing ability as the criterion and the various skill tests.

Percentile norms are also included for each sex separately and for each age group from ten through sixteen to seventeen years and in College. The
T-Scores are also provided so that testers can combine the results of all tests in order to obtain a battery score. Norming data were collected from 10,000 students representing thirty-five states. From the standpoint of administrative feasibility, it was indicated that the four-item test battery could be administered in two periods to an 'average-sized' group. This basketball skills test battery of four items Speed Spot Shooting, Accuracy Speed Passing, Control Dribble, and Defensive Movement replaced the earlier tests of nine test items published in 1966 as separate manuals for boys and girls in 1984.

**Kirubakaran (1986)** constructed a battery of objective skill test in Hockey for Madras University students. 32 men college students belonging to the age group of 19 to 25 years were selected and they had enough experience in the game as players representing the college or the university. The researcher conducted the following tests to them. Speed, Dribble test, Ball carrying, dodging, passing ability test and target hitting test. The scientific authenticity of the battery of skill tests was established by computing the correlation co-efficient. The battery of skill tests constructed by the investigator measures the offensive Hockey playing ability of the Madras University students. It is found that the battery of objective skill tests satisfied the criterion of scientific authenticity in reliability, objectivity, validity and administrative feasibility. Further they had a significant
correlation between the total scores of the test battery and the hockey playing ability assessed by the experts.

**G.B. Dangwal (1981).** The purpose of the study was to measure specific element constituting the playing ability of state level hockey players. The subjects were Netaji Subhash National Institute of Sports regular trainees and three experts working as coaches were appointed as experts for ranking the players. The tests were:

01. Speed of the ball
02. Stopping and shooting
03. Interception and clearance
04. Receiving and passing
05. Tapping with only left hand or,
   Tapping through wooden blocks
06. Dribbling through wooden blocks
07. Speed with optimum ball control
08. Dodging towards right and left
09. Running with ball while changing direction
10. Specific speed endurance
11. Test of relative performance

Reliability: Through test retest method. Product Moment Method between two sets of scores.
Validity: Spearman’s Rank Correlation Co-efficient between rank of the subjects and corresponding rank of the subject according to the scores. The test enabled ranking the subjects for their attacking and defending ability separately. The test for dodging and the test for specific endurance require further investigations.

M.M. Antrim (1972) designed a continuous test item to predict and evaluate basketball playing ability using 26 college women in a beginners’ basketball class. The test included 3 phases dribbling, shooting and rebounding, and finally, passing and catching. She used judge’s ratings as a criterion score and found that the time for the test related to the criterion more highly than the separate parts. Agreement among the judges was 0.87. A validity coefficients of 0.74 resulted when the player rankings were correlated with the total time on the test. The reliability was estimated in several ways, but was highest when the test was preceded by 2 practice trials followed the next day by 2 trials, which were totalled. Under the conditions the reliability coefficient was estimated to be 0.82.

Jullee A. Illiner (1969) suggested the construction and validation of a skill test for the drive in filed hockey. Beginning high school players, physical education major and association players were tested on their ability to drive the ball to the left and to the right after 5 weeks of instruction and practice. Speed and accuracy were considered to be important aspect of the
drive and were therefore included in the skill test. Scores were obtained for each component and were then combined into a single score by means of additive and multiplicative techniques. Statistical evidence presented included studies of objectivity, reliability, validity, target adequacy and scoring. The test was found to be objective ( $r = .97$ and higher ), reliable ( $r = .72$ and higher ) and valid measures of an individuals ability to execute the drive.

**Halverson (1969).** One of the well-known tests for the basketball game is a nine-test battery recommended by AAHPER. The AAHPER Basketball Skill Tests for Boys consists of nine test items ( Qtd. In Johnson and Nelson 1988 ). They are Front Shot, Side Shot, Foul Shot, Under Basket Shot, Speed Pass, Jump and Reach, Over arm Pass for Accuracy, Push Pass for Accuracy, and Dribble. The percentile norms table presented relates to the age groups 10 to 18 for boys and girls separately. The validity and reliability of these test items were not, however, reported by the authors. The same nine test items were used for boys as well as for girls.

He also investigated the validation of the AAHPER Basketball Skill Test for Male Physical Education Majors at the University of North Dakota. Group I, composed of nearly eighty percent of major enrolled during the spring of 1968, was given AAHPER test. From this group, 28 subjects were retested on the following day. This retest group ( Group II ) was chosen at
A third randomly-selected subgroup was evaluated by a jury of experts to determine their basketball playing ability. The 20 students in group III were thus used to evaluate validity. The AAHPER test was found to be reliable (0.95) and valid (0.85) for Physical Education Majors at the University of North Dakota. T-Scale norms, suitable for this group, were established.

**Harrison (1969)** developed a four-item basketball test for boys in grades seven through ten. The four items were field goal shooting, speed pass, dribble, and rebounding. The subjects were one hundred boys in each of the grades. Test-retest correlations for the separate tests ranged from 0.72 to 0.96 and for the total battery, the coefficients clustered between 0.91 and 0.96. The validity of the test was established as correlations between scores on the test and three criterion measures followed; 0.82 with the Johnson Basketball Test; 0.86 with peer ratings of basketball playing ability, and 0.77 with expert jury ratings. A correlation of 0.89 was reported between the test and the average of the three basketball criterion measures.

**Pennington (1967)** and others administered seventeen skill tests on strength, motor ability, and handball skill tests on thirty-seven College men at the University of Oregon. The highest correlations of single variables with round robin play were 0.71 for a serve test; 0.68 for thirty second
volley; and 0.66 for total wall volley score tests. A multiple regression
equation was computed for these tests as follows:

\[
\text{Criterion} = 1.75 \text{ (Service placement)} + 2.27 \text{ (total wall volley)} + 1.59 \text{ (back–wall placement)} + 0.29
\]

Kowert (1962) constructed a badminton ability test battery for men
where the judges rating scale yielded a reliability co-efficient of 0.88 when
correlated with the class rankings of the subjects playing ability. An ‘r’ of
0.97 was obtained for the reliability of the judges rating scale as determined
by the inter-class correlation between the sum of three judges rating and the
scores obtained for the diagonal run. It was found that the badminton
playing ability of the male college students (N=46) could be successfully
measured by the multiple regression equation containing the variables of the
diagonal run test, French’s Long Serve Test and Miler’s Wrist Volley test.

Clifton (1962) developed a single hit volley test to evaluate the
volleying ability of College women students in volleyball. The highest
validity coefficients were at the 7 feet line for trial one and the sum of trails
one and two with no significant difference found between these validity
coefficients. A sufficiently high reliability coefficient of 0.83 was found for
the sum of trials one and two at the 7 feet line and when compared with
reliability coefficients of 0.67 for trials one at the 7 feet line was found to be significantly higher.

**Strait (1961)** constructed and evaluated a field hockey skill test. The test required the use of the back board and included the skills of fielding, dodging, dribbling and driving. The test had a reliability coefficient of 0.87 for Smith College students and of 0.86 for members of the Hampshire Field Hockey Association. Using the ratings of three judges as a criterion of the validity for the students the validity was 0.61; for the members of North East Field Hockey Association sectional team members it was 0.76. The test was equally suitable for evaluation of attack and defence position players.

**Harbans Singh (1959)** prepared a two-item test, which included "dribbling and hitting", and "dribbling and goal shooting". The subjects for the study were 107 students of two Arts Colleges of Punjab. He validated the tests against the subjective rating of the two experts, who were national umpires in hockey. The dribbling and hitting test gave a validity of 0.78 and the validity of dribbling and goal-shooting test was 80. He correlated the two tests in order to determine if they measured different aspects and the result was 0.41. He also prepared t-scores for college men.

**Friedel (1956)** proposed a single item field hockey test for high school girls which she called pass receiving, fielding and driving while moving. There are ten trials from each side, right and left. Each trial is
timed with a stopwatch. By the split-half method correlated by the use of the Spearman Brown formula, reliability coefficients were 0.90 for the left side and 0.77 for the right side. For validation the test correlated with Schmithals-French ball control test. The validity was 0.87.

**Broer and Miller (1950)** designed a test to measure the ability of college women to place forehand and backhand drives into the backcourt area. They obtained a reliability co-efficient for this test of 0.80 for both the beginners and the intermediate tennis players. The validity of the test was determined by correlating the ratings given to the subject by various judges with the subject’s performance on the test. For the intermediate group, the correlation was 0.85 and for the beginners it was 0.61.

**Clayton Cornish (1949)** developed a scientifically devised test of handball skill. Using a criterion of the differences of points scored by a subject as compared to points scored against him in 23 games and involving 134 different subjects, a validity coefficient of 0.694 was obtained with a multiple correlation of five skill tests. The tests include the following:

01. Second volley
02. Front-wall placement
03. Back-wall placement
04. Power test
05. Placement service
He suggests a two-test battery of items 1 and 5, which correlated 0.667 with the criterion. The power test appears to be the best single test in view of its correlation with the other tests. Neither norms for reliability are reported.

Lockhart and Mc Pherson (1949) have established a volley test for Sophomore college women to measure the badminton playing ability. The validity of the test was determined by correlating the total scores of three experienced judges on the badminton playing ability of sixty eight girls on a one to ten point scale with the total scores that these players made on the badminton volleying test. The resultant coefficient of correlation was .71+ .06. Next a round-robin tournament was conducted with twenty seven girls. The percentage of the total games won was correlated with each score the girl made on the badminton volleying test. The resultant ‘r’ was .60+ .12.

A third confirmation of validity was computed by correlating the total judge’s opinions with the percentage of total games won by each girl in the round-robin tournament. The resulting ‘r’ equalled .90+.03. By the test-retest method of determining reliability, a correlation of .90 is obtained in administering the test twice to fifty players, within an interim of three days.

Knox (1947) developed a basketball battery composed of speed dribble, wall bounce, dribble-shoot, and penny-cup tests. Reliability coefficients for the test items ranged from 0.58 to 0.90 and for the total
battery the coefficient was 0.88. The criterion for validating the test was success in making a ten-man high school basketball squad competing in an Oregon district tournament. Three divisions of basketball ability of non-players, substitutes, and first-team members were compared at eight “B” league high schools composing the district organization. The tests were given to all the boys in the schools during the second week after regular basketball practice had started. The results of the study revealed that there was 89 percent agreement between the results of the basketball test and squad membership for tournament play and 81% agreement with membership on the first team. The six members of the “all star” team achieved total scores on the test that were not reached by 95% of the 254 boys included in the study.

Of the 24 members of the Eugene High School basketball squad, the total scores obtained on the test agreed with the eventual selection of players taken to the Oregon State Tournament in five out of seven cases as to squad membership and five out of five cases as to membership on the first team.

D.K Brace (1943) proposed a football achievement test to predict likely success of players. The test includes

01. Forward pass for distance,

02. Punting for distance
03. Forward pass at a target of 2, 4 and 6 ft diameter concentric circles, 15 yards restraining line
04. Dodging run with ball
05. 50 yd dash with football
06. Charging – with harness connected to back and leg dynamometer
07. Pull out – time to run around post 9½ ft to the left and across line 5 yards forward and
08. Blocking – time to knock over three dummies and complete a 15 yd course. One practice trial is allowed for each item except 5. No scoring tables are available. Low but acceptable validity with judgment criterion was reported.

**French and Cooper (1937)** experimented with four test elements; repeated volleys, serving, setup and pass, and recovery from the net. They found that the best combination of measures for girls in grades nine to twelve was the serving test and repeated volleys. The validity coefficient of this combination, with ratings of volleyball ability as the criterion, was found to be 0.81. Basett, Glassow, and Locke studied the reliability and validity of two volleyball test items, serving and volleying, with college women. Reliability of the serving test was 0.84, and of the volleying test, 0.89.
Validity coefficients, using the composite ratings of three judges as criteria, were 0.79 for the serving test and 0.51 for the volleying test.

Johnson (1934) experimented with nineteen basketball test items, checking each test for validity and reliability. Two batteries of tests were finally proposed, the first to measure basketball ability, comprising the three test items, field-goal speed test, basketball throw for accuracy and dribble. And the second to find potential basketball ability, comprising the four test items, none of which requires ball handling; viz., footwork, jump and reach, dodging run, and Lowa Revision of the Brace Test. The reliability and validity of the battery for the basketball ability tests were 0.89 and 0.88, respectively; for the potential basketball ability test 0.93 and 0.84, respectively. Individual items on the ability test, however, had reliability coefficients ranging from 0.73 to 0.80. In securing validity, a biserial correlation of 0.88 was obtained between test scores and “good” and “poor” of basketball players, the good group was composed of boys made of high school basketball squad, and the poor group was composed of those who did not make the squad.

From the review of related literature it became very clear to the investigator that measurement in Physical education and Sports had been parallel to the development and growth of every game. Studies on various fields like anthropometry, motor qualities, cardiovascular, athletic ability and
fitness have begun much earlier. The need for assessing sports skills had been felt on every stage of the development of every game and the review clearly unfolds studies on construction and evaluation of skill tests in all games. The investigator was able to gain a thorough knowledge of the studies already done relating to the present problem.

It was also observed that while many studies have been done on other games to develop skill tests, only a few studies have been done on developing and evaluating skill tests in soccer. Moreover, from the review of related literature the investigator gained adequate knowledge about the methodologies employed including the statistics applied in the studies. Before proceeding with the present study the investigator has taken into account all the necessary information gained through the review and it is hoped that the present study will certainly be useful to the coaches and the players who are really starving for this kind of testing tool in soccer.