Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

In soccer the earliest skill test was described by Venderhoof (1932) but it was not scientifically devised. The first scientifically devised soccer skill test was constructed by Heath and Rodgers (1932) for fifth and sixth-grade boys and girls based on teachers’ analysis of the game. The test item included dribble, throw, place kick for goal, kicking and rolling ball. In the same manner, Nelson and Cozens (1934), Shafele (1940), Bontz (1942), Warner (1950), McDonald (1951), Crawford (1963), Annarino (1962), Johnson (1963), Crew (1968), Garry (1968), Mackenzie (1969), Yeagley, Kovacs (1973), Furness (1973) and Christian (1974) etc. had also developed some skill test items. But these test items were developed to measure the skill ability or general playing ability only. These were not developed for measuring the playing ability performance of the players.
Though various studies have also emphasized the relative importance of skill to playing ability in many games, as practical applicability of playing ability test on the basis of player’s skill proficiency has not been done so far. Hence, the research scholar felt the need for understanding such a study to develop or construct a criterion for objective measurement of playing ability of soccer players on the basis of their skill performance.

The purpose of this study was to construct the soccer playing ability test on the basis of skill performance of the players.

Total of 108 male soccer players between the age of 15 and 19 years, who were adopted by Sports Authority of India (SAI) at different hostels of Eastern Region (Kolkata) and North-Eastern Region (Imphal & Guwahati), were taken as the subjects of this study.

Based on the fundamental skills of soccer as dribbling, kicking, receiving, heading, feinting, tackling and ball sense, the research scholar had identified 44 possible skill test items after a discussion and critical analysis with Indian Soccer Coaches of different levels. For the development and setting of all the 44 test items into
appropriate manner, a trial run of all the skill test items was conducted on 11 soccer players of Lakshmibai National Institute of Physical Education, Gwalior.

After the trial run, through expert comments and suggestions of three experts, the following 32 skill test items were selected as the final skill test items:

**Dribbling -**

1. Shuttle dribbling
2. WM dribbling
3. 30-yd dribbling
4. 40 yd dribbling
5. Figure “8” dribbling
6. Dribbling against the opponent

**Passing -**

7. Ground pass a stationary ball (15 yds)
8. Ground pass a stationary ball (20 yds)
9. Dribbling and ground pass (15 yds)
10. Dribbling and ground pass (20 yds)
11. Aerial pass a stationary ball (20 yds)
12. Aerial pass a stationary ball (25 yds)
13. Dribbling and aerial pass (20 yds)
14. Dribbling and aerial pass (25 yds)

Kicking -
15. Kicking a stationary ball for distance
16. Dribbling and kicking for distance

Shooting -
17. Shooting a stationary ball in goal (20 yds)
18. Shooting a stationary ball in the goal (25 yds)
19. Dribbling and shooting in the goal (20 yds)
20. Dribbling and shooting in the goal (25 yds)

Receiving -
21. Receiving the ball with chest
22. Receiving a rolling ball with foot
23. Receiving a bouncing ball with sole of the foot
24. Receiving an aerial ball with foot
Heading -

25. Heading for distance

26. Heading for Accuracy (10 yds)

27. Heading for Accuracy (12 yds)

Feinting -

28. Feinting between flags

Tackling -

29. Tackling "one v/s one" in limited area

Ball Sense -

30. Juggling

31. Repeated wall rebounds (5 ft)

32. Repeated wall rebounds (7 ft)

For the purpose of the study, the following eight Sports Training Centres (STC) SAI Eastern Region, Kolkata and SAI North Eastern Region, Imphal and Guwahati were selected as the study centers:

1. STC Guwahati

2. STC Shillong
3. STC Golaghat
4. STC Dimapur
5. STC Imphal
6. STC Kolkata
7. STC Silliguri
8. NSTC Kolkata

The data of the study were collected in two methods i.e. playing ability and skill tests.

The data for playing ability of the players belonging to 4 centres namely, STC Guwahati, STC Golaghat, STC Shillong and STC Dimapur were judged independently by 3 experts when they were participating in “Gajen Kumai Memorial Inter-SAI Scheme Football Tournament” 2000-01 held at Sonapur (Assam) and the data for playing ability of the players belonging to remaining 4 centres namely STC Imphal, STC Kolkata, STC Silliguri and NSTC Kolkata were also judged independently by the same 3 experts when they were participating in “Gajen Kumai Memorial Inter-SAI Scheme Football Tournament” 2001-02 held at Dhing, Nowgong (Assam). A total of
118 players' playing ability were judged by the 3 experts. They were 14 from STC Guwahati, 14 from STC Golaghat, 14 from STC Shillong, 14 from STC Dimapur, 14 STC Imphal, 16 from STC Kolkata, 14 from STC Silliguri and 15 NSTC Kolkata. The average score of these three experts were taken as the score of each player.

The data on skill test for the first four centres were collected during the month of February, March and April, 2001. And for the remaining four centers, it was collected during the month of January, February and March, 2002. All the 32 skill test items were administered to the players at their respective training centres. To avoid the players from fatigue and monotony, all the test items were conducted on 7 to 8 consecutive days in two sessions i.e. morning and evening sessions. For the morning session the test were conducted from 6.00 am to 8.30 am and for evening session it was conducted from 3.00 pm to 6.00 p.m.

A total of 118 players participated in skill tests. They were 14 from STC Guwahati, 14 from STC Golaghat, 13 from STC Shillong,
13 from STC Dimapur, 15 from STC Imphal, 16 from STC Kolkata, 15 from STC Shilliguri and 16 from NSTC Kolkata.

The data of only those players who had participated or completed both playing ability test and skill tests were taken as the data of the study. So, a total of 108 players participated or completed in both playing ability and skill tests, were taken as the subjects and their performance were taken as the data of the study.

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.

For the establishment of validity, on the recommendation of experts and coaches of soccer, all the 32 test items were selected on the basis of their face validity.
The analysis of data for the establishment of reliability, the test-retest scores obtained by the same tester on the same subjects were found highly correlated.

And, the analysis of data for the establishment of objectivity, the two sets of scores collected by two testers from the same subjects, was found highly correlated.

The analysis of data for the relationship between the performance of playing ability and skill test items shows that there are significant relationship between the performance of playing ability and shuttle run (.561), WM dribbling (.744), 30-ym dribbling (.308), 40-ym dribbling (.373), figure '8' dribbling (.521), dribbling against the opponent (.249), ground pass a stationary ball from 15-ym (.469), ground pass a stationary ball from 20-ym (.523), dribbling and ground pass from 15-ym (.456), dribbling and ground pass from 20-ym (.404), aerial pass a stationary ball from 20-ym (.386), aerial pass a stationary ball from 25-ym (.327), dribbling and aerial pass from 20-ym (.211), dribbling and aerial pass from 25-ym (.305), kicking a stationary ball for distance (.305), dribbling and kicking for distance
shooting a stationary ball in the goal from 20-yds (.482), shooting a stationary ball in the goal from 25-yds (.410), dribbling and shooting in the goal from 20-yds (.562), dribbling and shooting in the goal from 25-yds (.494), receiving the ball with chest (.524), receiving a rolling ball with foot (.489), receiving a bouncing ball with sole of the foot (.461), receiving an aerial ball with foot (.448), heading for distance (.362), heading for accuracy from 10-yds (.385), heading for accuracy from 12-yds (.312), feinting between flags (.452), tackling "one v/s one" in limited area (.415), repeated wall rebounds from 5 feet (.327) and repeated wall rebounds from 7 feet (.644) as their calculated value were greater than the tabulated value of 0.190 at 0.05 level of significance. But the analysis further shows that there is no significant correlation between playing ability and juggling (.130), as its calculated value is lower than the tabulated value of 0.190 at 0.05 level of significance.

In factor analysis, significant factors responsible for variance and dominant were extracted from each group. All the dominant variables were grouped under different factors and nine factors were
retained from Rotated Factor Loadings (Varimax Solution). These nine factors together have accounted 65.42% (11.95%, 8.24%, 8.09%, 7.10%, 7.10%, 6.96%, 6.73%, 5.08% & 4.17% respectively) of the total common variance. The significance for factor loading was set at ±0.51 on an alpha level of 0.01 (two-tailed). Each factor was given a suitable name based on the highest loading item of each factor. The total of nine test items, one each from each factor having the highest loading, were selected as “WM dribbling” (0.81) from Factor 1, “Receiving a bouncing ball with sole of the foot” (0.72) from Factor 2, “Repeated wall rebounds from 5 feet” (0.74) from Factor 3, “Dribbling and kicking for distance” (0.81) from Factor 4, “30-yc dribbling” (0.75) from Factor 5, “Dribbling and ground pass from 15-yds” (0.69) from Factor 6, “Shooting a stationary ball in the goal from 25-yds” (0.86) from Factor 7, “Heading for accuracy from 12-yds” (0.80) from Factor 8 and “Aerial pass a stationary ball from 20-yds” (0.67) from Factor 9. The name of the selected items and the name of their respective factors are shown below:
<table>
<thead>
<tr>
<th>Factor</th>
<th>Name of the Test Items</th>
<th>Name of Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>WM Dribbling</td>
<td>Ball Control Ability</td>
</tr>
<tr>
<td>2.</td>
<td>Receiving a bouncing ball with sole of the foot</td>
<td>Ball Receiving Ability</td>
</tr>
<tr>
<td>3.</td>
<td>Repeated wall rebounds (5 feet)</td>
<td>Ball Sense</td>
</tr>
<tr>
<td>4.</td>
<td>Dribbling &amp; kicking for distance</td>
<td>Power in Kicking</td>
</tr>
<tr>
<td>5.</td>
<td>30-yard dribbling</td>
<td>Speed Dribbling Ability</td>
</tr>
<tr>
<td>6.</td>
<td>Dribbling and ground pass (15-yds)</td>
<td>Ground Pass Accuracy</td>
</tr>
<tr>
<td>7.</td>
<td>Shooting a stationary ball in the goal (25-yds)</td>
<td>Goal Scoring Ability</td>
</tr>
<tr>
<td>8.</td>
<td>Heading for accuracy (12-yds)</td>
<td>Heading Accuracy</td>
</tr>
<tr>
<td>9.</td>
<td>Aerial pass a stationary ball (20-yds)</td>
<td>Ground Pass Accuracy</td>
</tr>
</tbody>
</table>

The above-mentioned 9 test items, selected one from each factor, were included in the Soccer Playing Ability Test Battery.

For the scoring purpose, based on the Hull Scale for all the 9 test items included in the Soccer Playing Ability Test Battery, a norm was developed. And, based on this norm, all the raw scores of selected
9 test items for 108 soccer players were converted into norm scores and added together separately for each player. These overall performance scores were given the name as “playing ability performance score” and was interpreted as the following by developing a grading scale based on the 6-Sigma Scale:

<table>
<thead>
<tr>
<th>Scores</th>
<th>Alphabetical Grades</th>
<th>Interpretative Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 587</td>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td>521 to 587</td>
<td>B</td>
<td>Good</td>
</tr>
<tr>
<td>387 to 520</td>
<td>C</td>
<td>Average</td>
</tr>
<tr>
<td>321 to 386</td>
<td>D</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>Below 321</td>
<td>E</td>
<td>Poor</td>
</tr>
</tbody>
</table>

**Conclusions**

Within the constraints and limitations of the present study, the following conclusions were enumerated:

1. All the test items included in this study were highly correlated with playing ability performance except one item i.e. juggling.
2. The factor analysis yielded 9 skill test item factors.

3. One test item from each identified factor with the highest loading, was selected to constitute "Soccer Playing Ability Test Battery for 15-19 yrs". These test items are - WM dribbling, Receiving a bouncing ball with sole of the foot, Repeated wall rebounds (5-ft), Dribbling and kicking for distance, 30 yd dribbling, Dribbling and ground pass (15-yds), Shooting a stationary ball in the goal (25-yds), Heading for accuracy (12-ft) and Aerial pass a stationary ball (20-yds).

4. The playing ability performance (overall performance) score of the players were interpreted by using a grading scale on the basis of 6-Sigma Scale as A, B, C, D, & E or Excellent, Good, Average, Satisfactorily & Poor respectively according to their overall performance score based on the Hull Scale Norm, which was developed for all the 9 test items.
Recommendations

In the light of conclusions drawn, the following recommendations are made:

1. The constructed playing ability test may be used by the soccer coaches, trainers and physical education teachers for evaluating the performance of players.

2. While constructing the specific soccer playing ability test, the components which are critically related to soccer performance such as selected forms of dribbling, ball controlling & passing etc. should be given utmost importance.

3. Similar study may be carried out on different age groups and female soccer players.

4. Similar test may also be constructed for various level soccer players.

5. Similar test may be constructed for soccer players playing at different field positions (forwards, midfielders and defenders).