INTRODUCTION

“Man is the measure of all things” - Protagoras

Modern age is the age of science. The progress, mankind has achieved through the last quarter of century excel that of all the past century. Research is a natural human activity which is inevitable in life, and education process should assist in the preparation of individual for the battle of life. Technology is already an important tool for coaches to observe measure, adjust and compare athlete performance both on and off the field. Coaches in this country have been leading the field of performance analysis in sports for over 4 decades. In order to maintain this advantage, it is important to frequently review existing tools and conduct research to identify opportunities for further development and commercialization of new coaching tools.

Sports have accepted as a cultural phenomenon. There is constant endeavor to achieve higher standards of performance. As a result, today’s sports demands optimum physical fitness and highest degree of performance. Thus, it’s become matter to find out level of performance and abilities of an athlete. Testing amount of knowledge achieved, Skills develop and attitude got an important function of any teaching and coaching process. A problem of Testing is much more complicated in area of physical education and sports as the factor affecting in learning physical Skills are too numerous got from well planned schemes of lessons, further the criterion behavior in Testing physical Skills is not amenable for easily grading objectivity, specially the Skills of sports and games which are development equally on the circumstances of playing as the physical Skills of the players.

The participation in sports warrants a fundamental desire to compete and surpass others. Every sports activity involves competitions. However, winning in the competition surely depend upon performance. Better the performance, the more chances of win. The quality of performance displayed by athletes in competitive events is determined by the kind of Skills ability or playing ability involved in the game. Playing ability is found to be a strong predictor of any competitive sports.
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In sports and games the performance is inevitable. Nowadays, the nature of sports and games has gone through tremendous radical changes in international arena. Identification of effective players is becoming a crucial, because day by day the games have become highly competitive. In sports and games, performance of players is judged by competition results. Apart from competition, the assessment of a player in any sports discipline can be done either by subjective or objective means. The test, measurement and evaluation concept was in existence in physical education for past several years. Many extensive research works have been done in these areas.

For many motor Skills, performance is a reliable means of evaluation instructional objectives. Some authors refer to such means of measures as Skills Tests or rating scales, which in a sense they are. However, it is important to remember that in this context the performance environment is also the evaluation environment. The instructional objectives and the performance may thus be identical, and logical validity more readily assured.

Measurement of playing ability has alternative procedure namely, Skills Testing through simulated Test items and rating of ability by judges in actual game situation. Though ideally the rating of playing ability provides a more comprehensive and accurate measure. Practical problems of getting qualified judges and lack of uniformity in different situations wide use of this method. Skills testing through simulated items, on the other hand, can be standardized, is easier and provides objective measure of playing ability. The need of validation such Skills Test against sound criterion is usually and quite successfully met by using judges rating of playing ability or tournament ranking s the criterion. Essential features of good sports Skills Test include a minimum acceptable reliability, easy and accuracy of scoring and provision for diagnostic interpretation.

Evaluation is essential in the process of teaching and coaching. Through evaluation, a teacher/coach can know the extent to which learning has taken place. Hence, the teacher/coach must be aware of some evaluation techniques, which will enable him to measure the student’s/player’s Skills objectively and classify them initially as well as by measuring the progress made by them. There are few Skills tests in various physical activities, which help to measure the playing abilities of the students/players in different games and sports. Sports Skills test are designed to measure the basic Skills
used in the playing of a specific sport. Because of the wide range of Skills in most sports, a selection of the most important Skills is invariably necessary. The selection is usually based keeping in mind the literature available, opinion of experts as well as by applying appropriate statistical techniques. The Skills items collectively are called test battery. The Skills test helps the students to evaluate their performance in the fundamental Skills the game and to provide an incentive for improvement. The test also serves the purpose of helping the teachers/coach to measure student’s/player’s performance and evaluate their own teaching/coaching procedure and program.

In measurement and evaluation literature, a number of methods of Skills evaluation have been mentioned. Some methods are objectives, while others are subjective. Some are valid and reliable, while others are not. The obvious reason is that simple Skills are easy to evaluate while complicated ones are difficult to assess. The qualitative aspect of a Skills performance is not easy to test objectivity.

The development of sports skill has had a long and productive history. Among the earliest were the Athletic Badge Test presented in 1913 by the Playground and Recreation Association of the USA. These tests were for the sports of Basketball, Tennis and Volleyball. Elizabeth Beoll proposed other early skills tests in 1924 for Basketball by Brace and in 1925 for Tennis (Clarke and Clarke, 1987). The research council of the American Alliance for Health, Physical Education and Recreation (AAHPER) published several sport skill tests in the late 1960s that were developed from the combined efforts of researchers, city directors of physical education and public school teachers. The measurement and evaluation council of the AAHPERD formed a task force in 1979 to revise and expand the AAHPERD sports skill test series. The Basketball and Softball skills tests were revises and a Tennis test was added to the series (Baumgartner, et al. 2003).

A universal goal of physical education programme is to produce permanent measurable changes in student psychomotor behaviour, in skills ranging from touch Football to modern dance, from Volleyball to Scuba diving. For the achievement of psychomotor objectives to be evaluated, the measurement procedures-tests, rating scales or other instruments must parallel the instructional objectives.
A skill is an ability, usually learned and acquired through training, to perform actions which achieve a desired outcome. During 1930, skill testing in the fundamental skills in different games and sports were devised. Brace presented one of the earliest skill tests on Basketball. All those tests were followed the general procedure was to determine statistically a few simple test items to measure the total activity of that sports and games. Skill tests were developed to measure the basic skills used in a specific sport (AAHPERD, 1968). The skill test items are collectively called a test battery. Meanwhile the nature of the battery of tests in measuring the fundamentals skills should be a field based one rather than the lab based. Since the field based test items highlight the real game situations, assessing the player in the real game situation is encouraged.

Skill tests require an environment similar to the game environment and standardized procedures for administration. The validity of skill tests is judged to some extent on the consistency between testing and performing environments. This does not mean you must recreate exactly the playing environment; it does mean that the movements and the activity must correspond to those of the actual sport. The virtue of skill tests is a subject of ongoing debate. Many skill tests offer an objective, reliable and valid method for evaluating motor skill objectives, while others do not. It is advised not to use a skill test that does not meet evaluation needs or the important criteria of reliability, validity and feasibility for mass testing. Also, be sure to adopt tests that were developed on students of the same gender, age and experience level as your students. One can also modify an existing test to meet the needs.

According to James.R.Morrow (2005) the objective skill test can be classified as four primary types, they are;

**Accuracy-Based Tests**

Accuracy-based skills test usually involve the skill of serving an object, such as a Volleyball, Tennis ball, or Badminton shuttle cock. They may also involve some other test of accuracy: throwing in Football or Baseball, free throws or other shots in Basketball, or kicking goals in Soccer. The primary measurement issue associated with accuracy tests is the development of a scoring system that will provide reliable yet valid results.
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**Repetitive-Performance Tests**

Repetitive-performance tests are tests that involve continuous performance of an activity (e.g., volleying) for a specified period of time. They are commonly called wall volleys or self-volley and can be used to measure the strokes of racket sports, such as the forehand or backhand stroke in Tennis and volleying and passing in Volleyball. Repetitive-performance tests usually have a high degree of reliability, but unless they are constructed carefully they may not approximate the same type of action that is used in the game, in which case validity is reduced.

**Total Body Movement Tests**

Total body movement tests are often called speed tests, because they assess the speed at which a performer completes a task that involves movement of the whole body in a restricted area. A dribbling test in Basketball or Soccer measures this skill. Base running tests in Baseball and Softball are also tests of this type. These tests usually have a high degree of reliability because a large amount of inter individual variability is associated with timed performances. These tests can be administered quickly, but they have two inherent problems. First the test must approximate the game performance, and in many cases flat-out speed of movement is not always required in the game.

**Distance or Power Tests**

The final classification for objective skill test is distance or power performance tests, which assess one’s ability to project an object for maximum displacement or force. The Badminton drive test for distance and the Racquetball power serve test are examples of this type (Strand & Wilson, 1993), as are distance throws in Softball and Baseball and punt, pass, and kick competitions. One problem with these tests is ensuring that they are performed in a game like manner. Another question with tests of distance is whether to take accuracy in account. For example, in the punt, pass, and kick contest, the distance off the line of projection is subtracted from the distance of projection. Because of this, a performer might hold back from using maximum force for fear of losing accuracy. In contrast, in track events such as the discus and shot put, these corrections are not made as long as the object is projected within a given area. Consequently, before using a test it is important to consider whether the test requires or accounts for any correction for accuracy.
Need of a Skill Test

At present the physical education teacher and coaches in India have the resources sufficiently to measure the physical, motor and performance related components, whereas the tests of measuring the fundamental skills in sports and games are very limited. Further the available tests are also not home based. So the results and conclusions derived from these tests can have a chance to mislead due to some extraneous factors.

However the professionals in the field of physical education and sports are forced to use foreign system because of limited options. In such a situation the resources on tests and measurements to measure the fundamental skills have to be enhanced. For that, physical educators and coaches should have a sound knowledge on testing and measuring the performance related components (physical, physiological, anatomical and psychological). Such a sound knowledge gained from the test and measurement, help them study the state and progress of individual performance in the fundamental skills and identify the right type of athletes because the aforesaid components are functioning as determinants in individual performance. The field of Indian sports science has very limited scientifically structured tests and measurements to assess the individual performance. The field of test and measurement to Indian applications has been chosen as an area with the intention of imparting the real game situations admissible to Indian conditions.

Sports Skills tests are designed to measure the basic Skills used in playing of specific sports. Because of wide range of Skills in most sports, a selection of most important Skills becomes invariability necessary. The selection is usually based on expert’s judgment or opinion or statistical analysis and Skills items called test battery.

The Skills tests help the students to evaluate their performance in game and to provide an impetus to improvement. The test also serves the purpose of helping a teacher to measure student’s performance and to evaluate his own teaching procedure and program.

The Skills tests require the criterion of an environment similar to the game environment and the standardization of procedure for administration. The validity of
Skills test can be judged in part by the extent to which the testing environment duplicates the playing environment.

Tests are very important in the area of physical education. Tests are widely used to diagnose the needs and weakness of the students, to evaluate the effectiveness of a programme, to grade and classify the students with reference to their performance levels, to motivate the students towards a particular activity or skill by means of a test at the end of the programme as an instructional device, as a prediction and as tool of research.

In test construction the test to be valid should have some basic considerations. The basic considerations would adhere to the standards of significance of test such as validity, reliability, objectivity and norms.

According to Johnson and Nelson (1998) the nature of the game should be analysed in steps one in order to determine the skills that are to be measured. Mere listing of components that are involved in activity is insufficient. It is to determine the relative importance of a component because some of the traits involved in the skills, which are the by products of a factor.

In step two, selections of test items that measure the desired qualities are included. It is the most crucial step in the entire test construction. The selection of test items must be chosen with regard to their importance as well as their propensity to be measured accurately. Selection of the test items may be either from the established tests through the utilization of jury of experts or may be determined arbitrarily by analyzing the game situation. If the test pertains to a game, the test item should confirm as much as possible to the actual game. Test item is only a sample of total performance. In order to avoid the misleading results, the testing situations should be easy and feasible one.

Step three includes the exact procedures for administering and scoring of the test. In accomplishing this, the researcher must resort to certain amount of trial and error. The best-laid plans on paper may be totally inaccessible in practice. Because the applications of such plans in the real game situation may not be desirable due to many external factors and the test needs to be modified. The clarity and simplicity of directions have a direct bearing on the reliability and objectivity of the test. The next step is, determining the reliability of the test items. It can be obtained for each test by giving the test twice to
the same group of subjects. In this case care should be taken to ensure consistency among the subjects. Subjects selected for tests should be the course representative of population for who, the test is intended.

The fourth step is objectivity in that two competent testers administering the test item to the same individuals can accomplish it. It is directly related to the skill and integrity of the testers as well as to the clarity and simplicity of the instructions and procedures of the test. The next step is validity in that the composite score of all the test items in the battery may be used for validating the test items. Otherwise the judges rating on the overall performance of the game may be considered as a criterion to establish the validity. Next step is to revise the test in the light of the findings of the steps already described and finally the written instructions for administering and scoring the test.

The last step is the construction the norms. For that a large number of subjects who are representative of the population for whom the test was intended should be given and the test and their test scores are recorded. The score then is converted to percentile or T-Score. Norm for each item should be prepared usually the norms for the composite total score is also desirable.

Field Hockey is a popular sport played in more than 132 countries. Its official name by which it is usually known is field Hockey. However, some countries, and some encyclopaedic references, distinguish it from other sports with the same name as Field Hockey. The origin of the word Hockey was obscure. Hockey was forbidden in the Statutes of Galway in 1527. The word may derive from comocke and the Anglo-Saxon word for 'Hook', Hok; alternatively, it may come from the French word for a shepherd's crook, Hocquet.

Field Hockey-like games where teams attempt to place a ball into their opponent's goal using sticks have been found throughout history and the world. Historical records show that game was played in various antique civilizations, although it is not possible to know exactly when and where the game began. 4,000 year old drawings found in the Beni Hasan tombs, in the Nile Valley, Egypt depicted men playing the sport. Other traces show that the Persians, the Romans (a version called paganica), the Ethiopians, as well as the Aztecs were playing their own variation of the game.
The modern game was developed on the other side of London by Middlesex Cricket clubs, especially Teddington. In the late 19th century, largely due to the British Army, the game spread throughout the British Empire, leading to the first international competition between Ireland and Wales in 1895. The International Rules Board was founded in 1895, and Hockey first appeared at the Olympic Games as a men's competition at 1908 Olympic Games in London, with only three teams: England, Ireland and Scotland. Men's Hockey became a permanent fixture at the Olympics at the 1928 Olympic Games, at Amsterdam.

An International structuring occurred in 1909, when England and Belgium agreed to recognize each other for International competitions, soon joined in the French federation. Hockey took its most important step forward in 1924 when the International Hockey Federation, the world governing body for the sport, was founded in Paris under the initiative of Frenchman, Paul Leautey. Mr. Leautey, The International Hockey Federation has continued to grow and spread around five continents.

The women's Hockey developed quickly in many countries and in 1927, the International Federation of Women's Hockey Associations (IFWHA) was formed. After celebrating their respective Golden Jubilees - the FIH in 1974 and the IFWHA in 1980 - the two organisations came together in 1982 to form the FIH.

Today, the International Hockey Federation (FIH) consists of five Continental associations - Europe and Oceania have since joined - and 132 member associations. In many ways, the FIH serves as the 'guardian' of the sport. It works in co-operation with both the national and continental organisations to ensure consistency and unity in Hockey around the world. The FIH not only regulates the sport, but is also responsible for its development and promotion so as to guarantee a secure future for Hockey.

The game had been taken to India by British servicemen, and the first clubs formed there in Calcutta in 1885. The Beighton Cup and the Aga Khan tournament had commenced within ten years. Entering the Olympic Games in 1928, India won all five of its games without conceding a goal, and went on to win in 1932 until 1956, and then in 1964 and 1980.

The Indian Hockey Federation was formed in the year 1925 in Gwalior, Madhya
Pradesh during the Scindia Gold Cup tournament. But it was not active after that, after the end of the World War I, the commander of the British Armed forces in India, Field Marshall Birdwood who was in charge of organizing the retreat of the combined Australian and New Zealand armies after the Gallipoli tragedy proposed a Hockey tour to New Zealand in 1926 as a friendship tour. The tour gave a chance for revival of the Federations and thus began the efforts of consolidating the Indian Hockey Federation as the Indian Army's Hockey team toured New Zealand.

The Indian Hockey Federation gained global affiliation in 1927 and joined the International Hockey Federation. A national championship between provinces was organized in 1928 at Calcutta to select the Indian team for the Amsterdam Olympics.

Field Hockey is basically game of Skills; as such a few attempts were made in America for developing an accurate Testing procedure. Review of studies revealed that a very limited numbers of experiments have been made in Testing individuals Skills. Some of Tests are from fundamental Skills and other with Hockey knowledge.

The Test of Field Hockey is much merged in the literature on Test and measurement in physical education. So, it is worthwhile to construct the objective Skills Test in Field Hockey for utility or feasibility of adopting them for grading players and selecting player for a team on the merit of their objectivity demonstrated ability.

Since Field Hockey is a combination of many Skills like Hitting, Pushing, stopping, Scooping, Passing, Receiving, Dodging and Dribbling. These fundamental Skills are basic requirement of a player. To asses a player, a Test is require, which can Test all these fundamental Skills. There are lot of Tests are designed by deferent coaches, sports scientists, researchers and physical educationist to assess the individual proficiency in field Hockey, But more over most of Tests are done on female and have complicated designs, which create problem to administer or yet not apply.

A review of other Field Hockey Tests also revealed that some of the tests were subjective, some of the objective Tests have high reliability while no mention has been made regarding the validity of the Tests, and those of objective tests validity is reported its low. Moreover, the number of subjects in all these students was comparatively small.
Schmithal (1940) developed Tests by dividing game into rule technique, coaching procedure and refereeing. Here again the method was based on expert opinion rather than objective Testing procedure.

Singh (1959), Strait (1940), Steward (1965), Champan (1982), Nirmala (1985), Gurdeep Kaur (1988), Danwal (1990), Mehrotra (1996), Rajpoot (2009) and Sursh (2010) constructed some Tests for the Field Hockey. These researchers lacked broad based approach as no attempt was made to Test all major Skills in one attempt.

Recent developments in Field Hockey, such as the playing surface, new stick material, and changes of rules, have increased the number of technical demands made on Field Hockey players at all levels. Due to the modern demands of the game, there is a need of highly reliable and valid test for Field Hockey. The skill test constructed by various experts in the field of Hockey was outdated and it measures the combinations of skills where, the player’s fundamental skills have to measure with a simple reliable one. Day by day the nature of the game changes its structure. Coaches, trainers and players are continually searching for effective methods of identifying and developing those characteristics in a player that may enhance performance. Hence, the research scholar has decided to design a test that measures the basic qualities of a player, which is very essential in the game situation. This test may help the coaches to classify the students into homogenous group, find out their talents and to the players to know about themselves. Most valid and reliable tests, however, measure one or two isolated skills without regard to how they are used in the actual game situation.
Introduction

Statement of the problem

The purpose of this study was to construction and validation of a test for general playing ability of field hockey players.

Objectives of the study

1. To construction of a test for general playing ability of field hockey players.
2. To validate of a test for general playing ability of field hockey players.
3. To find out the status of playing ability of field hockey players.

Delimitations

1. The study was delimited to the 300 male college hockey players.
2. The study was delimited to male Field Hockey player’s only.
3. The study was delimited by the subjects who come under 17 to 24 years age category only.
4. The study was delimited by player of field hockey from selected different colleges and Hockey academics run in different states of India.

Limitations

1. Variation in playing ability due to climate condition, ground condition, player physical and psychological factor that may affect the study.
2. Goal keeper was not considering in this study.

Definitions and Explanation of the Term

Skills

“An art, trade or technique, particularly one requiring use of the hands or body”. Skill is defined as “Automatisation of motor procedure”. (Hardayal Singh, 1991).
Test

“A form of questioning or measuring tool used to assess the status of one’s skill, knowledge, attitude or fitness.” (D.K. Kansal, 2008).

“A Test is an instrument or procedure that elicits an observable response to provide information about a specific attribute of a person or persons” (Barrow & McGee’s, 1999).

Reliability

“The process of evaluating the degree of consistency in results with which a test or an instrument measures on repeated use of the test or instrument by the same tester”. (D.K. Kansal, 2008).


Validity

“The degree to which a test actually measures what it claims to measure. (David K. Miller, 2006).

“The process of evaluating the degree to which a test measures the factor for which it was designed.” (D.K. Kansal, 2008).

Objectivity

“The process of evaluating the degree of agreement in the results obtained by different testers by using the same tests or instruments” (D.K. Kansal, 2008).

“Objectivity is a specific form of reliability and can be determined by the test-retest (with different individuals administering the test) co relational procedure”. (David K. Miller, 2006).
Norm

“An experimentally derive index which enable to a person to compare the achievement or status of performers with that similar group”.

“The status quo of defined group in the form of statistical constants” (D.K. Kansal, 2008).

Dribbling

“Dribbling is to proceed or to move forward having full control over the ball towards the desired direction and at a required speed”. (Dureha & Mehrotra, 2003).

“Dribbling is a process by which a player moves in the desired direction, at a required speed, having full control over the ball, to achieve a predetermined aim.” (H. Singh, T. Singh & I.S. Gill, 2002).

Push

“To propel the ball in a required direction by placing the stick immediately behind the ball in such a way that the ball is neither raised nor hit”. (Dureha & Mehrotra, 2003).

“Moving the ball along the ground using a pushing movement of the stick after the stick has been placed close to the ball. When a push is made, both the ball and the head of the stick are in contact with the ground.” (F.I.H. Rule book, 2013).

Hit

“Hit is when we strike the ball at the centre by that side of the (Hockey) stick and ball goes along the ground in the direction of the target”. (Dureha & Mehrotra, 2003).

Flick

“Pushing the ball so that it is raised off the ground.” (F.I.H. Rule book, 2013).

“Flick is to lift the ball over and above the opponent or opponents stick almost at knee to waist level.” (Dureha & Mehrotra, 2003).

Slap

Slap means the ball travel very fast in a minimum possible time. The shot with a half back swing of hands slightly apart on the stick. So that it is combination of pushing and hitting.

Receiving

“Receiving the hockey ball means fielding the ball on the stick so that it is instantly brought under the control without a rebound.”

Rolling

“Rolling is an art to beat a defender in space and executes the accurate pass to the teammate at full control”.

Scoop

“The Scoop is the method to put the ball over the heads of the players to avoid interception”.

Significance of the study

1. Study will develop Skills related Test for field hockey players.

2. Study will help to locate potential in field hockey players.

3. The Test will help to coaches and physical education teacher to evaluate the effectiveness of their training and conditioning program.

4. It will provide guidelines to field hockey coaches to develop a skills related training program for the players.
5. The study will serve as a motivational force to field hockey players to improve their status of skills.

6. The study will yield norms to be used for the evaluation, classification, and selection of the players at different levels of competitions.