

# Construction of knowledge test on rules of hockey for physical education students

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## ■ ABSTRACT

Knowledge test is the designed to measure what individual knows about a particular subject distinguished from aptitude, and physical performance test. The purpose of the present investigation was to construct a knowledge test on rules of hockey for physical education students. Fifty students from the School of Physical Education, Devi Ahilya University, Indore (Madhya Pradesh), in the session 2007-08, were randomly selected to serve as subjects. The age of the subjects ranged from 17 to 25 years. A 107 items of objective test was first administered to 10 students in order to determine the clarity of question items and on that basis the question items were refined and subjected to careful analysis. Then a second trial run of the question items was administered to 50 students, which they answered in the allotted time of 90 minutes. These response sheets were then evaluated. 31 items eliminated on the basis of difficulty rating and 56 items were discarded on the basis of index of discrimination. Therefore, the final test contained 46 questions.

■ **Key Words** : Hockey, Construction, Knowledge test, Index of discrimination, Difficulty rating

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Hockey has become one of the most popular games in the world and of the major game. It is the only one that has remained entirely amateur, a status which is jealously preserved by all those who play or support. For the game from which the present one originated in generally accepted as have been for over 200 year. Its popularity has no doubt, always owned to the fascination man finds in hitting a ball with stick. Today hockey is essential to a team-game and has developed into a fast and highly skillful one (Singh, 1959).

The test construction in physical education and sports is vital role for the measurement of specific physical, motor or psychological traits. The art of test construction requires a good deals or expertise. The basic concept in the construction/selection of test is that the test selected/constructed should be measure precisely and objectively what it was desired to be measured (Kansal, 1996).

Knowledge is one of the objectives of most physical education programmes. It should play an important role in

the total evaluation of physical education potentials. Many health related fitness programmes have knowledge objectives. The extent to which these objectives are met can be best and sometimes exclusively be determined with a knowledge test (Baumgartner and Jackson, 1991).

## ■ METHODOLOGY

The main objective of this study was to construct a knowledge test on rules of hockey for physical education students. Fifty students from the School of Physical Education, Devi Ahilya University, Indore (Madhya Pradesh), in the session 2007-08, were randomly selected to serve as subjects.

The knowledge test consisted of 107 objective type questions from different aspects of the game in a definite proportion. Questions were selected covering various aspects of the game *i.e.* new laws, skills, terminologies, strategy, modern trends of the game and their interpretation

Table 1 : Items discarded after item analysis			
Q. No.	DR	ID	Total
1.	X	X	X
2.	X	X	X
3.	X	X	X
4.	X	X	X
5.	X	X	X
6.	X	X	X
7.	X	X	X
8.		X	X
9.			
10.			
11.	X	X	X
12.	X	X	X
13.		X	X
14.	X		X
15.		X	X
16.	X	X	X
17.		X	X
18.		X	X
19.	X	X	X
20.		X	X
21.			
22.		X	X
23.			
24.	X	X	X
25.	X	X	X
26.	X	X	X
27.	X	X	X
28.		X	X
29.		X	X
30.			
31.			
32.		X	X
33.		X	X
34.		X	X
35.		X	X
36.	X	X	X
37.	X	X	X
38.			
39.		X	X
40.			
41.			
42.		X	X
43.			
Q.No.	DR	ID	Total
45.			
46.		X	X
47.		X	X
48.	X	X	X
49.			
50.			
51.			
52.		X	X
53.			
54.			

Table 1: Contd.....

Table 1: Contd.....			
55.			
56.			
57.			
58.			
59.			X
60.			
61.			X
62.		X	X
63.		X	X
64.			X
65.			
66.		X	X
67.			
68.			
69.			
70.		X	X
71.			X
72.			
73.			
74.			
75.			
76.			
77.			X
78.			
79.			
80.			X
81.			
82.			
83.			X
84.			
85.			
86.		X	X
87.			
88.			X
89.			
90.			X
91.			
93.			
Q. No.	DR	ID	Total
94.	X	X	X
95.			
96.			
97.			
98.			
99.			X
100.			
101.			X
102.		X	X
103.		X	X
104.		X	X
105.		X	X
106.		X	X
107.		X	X

The final test therefore contained forty six questions

adopted by the International Hockey Federation. Before administering of the test, intensive instructional classes were conducted regularly for the subjects to cover various aspects. The game were theoretically explained with practical implications. Each explanation was taught with due explanations with the help of diagrams (wherever necessary).

A 107 items of objective test was first administered to ten students in order to determine the clarity of question items and on that basis, the question items were refined and subjected to a careful analysis. Then a second trial run of the question items was administered to 50 students, which they answered in allotted time of 90 minutes. These sheet were evaluated in a carefully manners.

**■ OBSERVATIONS AND DISCUSSION**

All the subjects were given ample direction before administering the test. The answers to be written in the blanks were provided with each question. All questions carried equal marks and maximum marks were 107. 1 point was assigned for each correct response. The sum of the total number of correct responses was the final score of each subject. The range of scores of fifty examinees was 37 to 98, the mean score was 67.5. Item analysis was used to make decisions about individual items within the test as well as the worthiness of the test as a whole. For analyzing this, Difficulty Rating and Index of Discrimination were employed. The reliability of the test was established by using Kuder-Richardson formula. The mean value of selected 46 items was 28.93. The standard deviation of these items was 6.50, which yielded a reliability co-efficient of 0.505 for the test. The test was

from the test on the basis of difficulty in rating.

Index of discrimination indicated those questions in which poor students did well or better than the subjects of the upper group. Such items were excluded from the test because such items failed to discriminate the abilities of good and poor subjects. A total of 56 items were eliminated for this reason.

Thus, a total of 61 items were discarded. The items discarded due to various reasons are presented in Table 1.

**Conclusion :**

- From the findings of the study, it was concluded that:
  - 31 items were eliminated on the basis of difficulty rating which contained items answered correctly by the students below 20 per cent and above 80 per cent.
  - 56 items were discarded on the basis of index of discrimination in which poor students did as well as or better than the upper group.
  - The revised test contained 46 objective type questions in hockey for the students of School of Physical Education, Devi Ahilya University, Indore (Madhya Pradesh).

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