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Construction of a Knowledge Test for Tennis Players

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ABSTRACT

The purpose of the study was the Construction of a Knowledge Test for Tennis Players. The fifty tennis players were randomly selected to serve as subjects from Gwalior Chambal Tennis Association, Gwalior. The age of the subjects was ranged between 14 to 21 years. All the subjects had regular theoretically classes during which different aspects of the game of tennis was theoretically explained. The test contents comprised of various aspects of tennis game with - Rules and their interpretation, history, tactics & techniques as adopted by International Tennis Federation (I.T.F.). The knowledge test was consisted of objective type questions on rules of tennis with its interpretations, history, tactics & technique in relation to the game of Tennis. Objective knowledge test was first administered to ten subjects to determine the clarity of question items and on that basis question items were refined. Then a trial run of the test was administered to all the subjects, which they answered in the allotted time period. These response sheets were then evaluated. This was used to make decision about individual test item 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. Using split halves method, a correlation between the odd and even numbered items was established. The Spearman – Brown Prophecy Formula was used. Finding of the study revealed that Eight items were eliminated on the basis of difficulty rating, which contained items answered correctly by the students above 80 percent and below 20 percent, Twelve items were discarded on the basis of index of discrimination in which poor students did well or better than upper group, A total of 16 questions were deleted depending upon the results of item analysis and the revised test contained 44 objectives type questions in Tennis Knowledge Test.

Keywords : Knowledge Test, Tennis, Tactics and Technique.

Introduction

Evaluation in physical education cannot be completed without the use of knowledge tests. The measurement of knowledge of physical education activity classes is just as important as knowledge measurement in other subject areas. Knowledge testing has probably always been a part of school physical education programs; however, most attempts to measure knowledge have been done through the use of teacher made tests. This is one type of knowledge test, which may be either objective or subjective in nature, but they have not been scientifically constructed and devised.

Methodology

For this purpose fifty tennis players were randomly selected to serve as subjects Gwalior Chambal Tennis Association, Gwalior. The age of the subjects was ranged between 14 to 21 years. All the subjects had regular theoretically classes during which different aspects of the game of tennis was theoretically explained. Keeping in view the learning level of the objects and utility of the test, the following objectives were set: To develop an understanding of the rules and their interpretation, history, tactics & techniques in relation to the game of tennis. The knowledge test was consisted of objective type questions on rules of tennis with its interpretations, history, tactics & technique in relation to the game of tennis. The preliminary form of the test was circulated to the experts and test items were refined.

Before administering the test intensive instructional classes were conducted for the subjects to be well acquainted with the subject matter. Each explanation was taught with due explanation of the diagrams (wherever necessary).

Objective knowledge test was first administered to ten sub-

jects to determine the clarity of question items and on that basis question items were refined. Then a trial run of the test was administered to all the subjects, which they answered in the allotted time period. These response sheets were then evaluated.

On the basis of the response scores, the question items were further subjected to careful item analysis. The items which were found unsatisfactory after analyses were either rejected or modified.

Statistical Procedure Item Analysis

This was used to make decision about individual test item 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.

Difficulty Rating

It was determined by the percentage of students who have chosen the correct responses for a particular test item.

The formula was:
 $DR = P / N$

Index of Discrimination

It was used to provide information about the high and low performance. For index of discrimination the scores from the top and bottom 27% of the students, who were appeared in the test. The formula used was:
 $ID = Cu - C1 / Nu$

Reliability of Data

Using split halves method, a correlation between the odd

and even numbered items was established. The Spearman – Brown Prophecy Formula was used:
 $r_{wt} = 2 r_{ht} / 1 + r_{ht}$

Content Validity

The content validity of the test was assumed as the test was constructed keeping in view the content material from the reliable sources.

Findings

TABLE-1

DIFFICULTY RATING FOR FIFTY STUDENTS ON KNOWLEDGE TEST OF TENNIS

S. No.	Question No.	No. of Students Answered Correctly	Difficulty Rating = Number of students answered an item correctly / Number of students appeared for the test
1	1	35	0.70
2	2	50	1.00
3	3	37	0.74
4	4	39	0.78
5	5	34	0.68
6	6	25	0.50
7	7	34	0.68
8	8	37	0.74
9	9	30	0.60
10	10	36	0.72
11	11	22	0.44
12	12	43	0.86
13	13	36	0.72
14	14	38	0.76
15	15	41	0.82
16	16	19	0.38
17	17	27	0.54
18	18	24	0.48
19	19	26	0.52
20	20	18	0.36
21	21	26	0.52
22	22	23	0.46
23	23	28	0.56
24	24	43	0.86
25	25	34	0.68
26	26	38	0.76
27	27	45	0.90
28	28	21	0.42
29	29	24	0.48
30	30	21	0.42
31	31	28	0.56
32	32	29	0.58
33	33	34	0.68
34	34	31	0.62
35	35	32	0.64
36	36	22	0.44

37	37	29	0.58
38	38	25	0.50
39	39	27	0.54
40	40	25	0.50
41	41	27	0.54
42	42	19	0.38
43	43	14	0.28
44	44	17	0.34
45	45	26	0.52
46	46	15	0.30
47	47	12	0.24
48	48	43	0.86
49	49	14	0.28
50	50	37	0.74
51	51	16	0.32
52	52	28	0.56
53	53	44	0.88
54	54	26	0.52
55	55	24	0.48
56	56	48	0.96
57	57	27	0.54
58	58	21	0.42
59	59	20	0.40
60	60	35	0.70

TABLE-2

INDEX OF DISCRIMINATION FOR FIFTY STUDENTS ON KNOWLEDGE TEST OF TENNIS

S. No.	Number of correct response in the upper 27 %	Number of correct responses in the lower 27%	Index of discrimination
1	13	8	0.36
2	14	14	0.00
3	12	6	0.43
4	14	5	0.64
5	14	6	0.57
6	14	4	0.71
7	13	6	0.50
8	12	7	0.36
9	10	1	0.64
10	9	3	0.43
11	10	7	0.21
12	11	5	0.43
13	13	8	0.36
14	13	8	0.36
15	7	8	-0.07
16	11	5	0.43
17	12	5	0.50
18	14	9	0.36
19	13	8	0.36
20	8	4	0.29

21	12	6	0.43
22	9	3	0.43
23	11	5	0.43
24	9	9	0.00
25	12	6	0.43
26	13	7	0.43
27	14	6	0.57
28	12	11	0.14
29	12	5	0.50
30	14	7	0.50
31	13	7	0.43
32	14	8	0.43
33	13	7	0.43
34	14	6	0.57
35	13	8	0.36
36	8	3	0.36
37	12	6	0.43
38	13	8	0.36
39	13	8	0.36
40	13	7	0.50
41	8	6	0.14
42	14	6	0.57
43	9	3	0.43
44	11	10	0.07
45	14	4	0.71

46	13	6	0.50
47	12	9	0.21
48	14	10	0.29
49	13	9	0.29
50	12	7	0.36
51	10	1	0.64
52	12	6	0.43
53	9	3	0.43
54	13	8	0.36
55	8	5	0.21
56	12	6	0.43
57	12	6	0.43
58	8	3	0.36
59	12	6	0.43
60	14	6	0.57

Findings

From the findings of the study it was concluded that: -

1. Eight items were eliminated on the basis of difficulty rating, which contained items answered correctly by the students above 80 percent and below 20 percent.
2. Twelve items were discarded on the basis of index of discrimination in which poor students did well or better than upper group.
3. A total of 16 questions were deleted depending upon the results of item analysis.
4. The revised test contained 44 objectives type questions in Tennis Knowledge Test.

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