

Research Paper :

Construction of knowledge test on rules of squash for physical education students

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ABSTRACT

Main objective of the study was to construct an objective knowledge test on rules of the squash game. For this purpose fifty subjects of School of Physical Education, Devi Ahilya University, Indore in the session 2003 – 04, were randomly selected to serve as subjects. A 188 items objective test was first administered to 10 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 of 90 minutes. These response sheets were then evaluated. 42 items were eliminated on the basis of difficulty rating and 80 items were discarded on the basis of index of discrimination. Thus a total of 99 items were discarded for various reasons and the final test therefore contained 89 questions.

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Evaluation in physical education cannot be complete 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. Whenever possible, the teacher should develop his or her own knowledge tests. Squash is a single or double game played in a 4 – wall court with a long-handled racket and a rubber ball that can be hit off any number of walls. Squash is an international game that is governed by the World Squash Federation.

METHODOLOGY

Main objective of the study was to construct an objective knowledge test on rules of the squash game. For this purpose fifty subjects of School of Physical Education, Devi Ahilya University, Indore in the session 2003 – 04, were randomly selected to serve as subjects. All the subjects had regular theory classes during which brief history and rules of the squash game were theoretically explained.

The knowledge test consisted of 188 objective type questions on rules and history of the squash game with their interpretations. The preliminary form of the test was circulated to the squash 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 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 of 90 minutes. 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.

OBSERVATIONS AND DISCUSSION

All the students were given ample directions before administering the test. The answers to be written in blank were provided with each question. All questions carried equal marks and maximum marks were 188. One point was awarded for each correct response. The sum of the total number of correct responses was the final score of each subject. The range of scores for fifty examinees was 70 to 170. The mean score was 118.4.

The value of coefficient of correlation of odd and even number questions with 188 test items was 0.564, which yielded a reliability coefficient of 0.706 for the entire test.

The findings of the study indicated that the degree of difficulty in rating for the knowledge test questions ranged from 0.08 to 1.00. The mean difficulty was 0.633. Those questions, which were answered correctly by more than 80 percent of subjects were judged to be too easy and answered correctly by less than 20 percent were considered too difficult. A total of 42 questions were eliminated from the test for this reason.

Index of discrimination indicated those questions in

Table 1 : Items discarded after item analysis

Sr. No.	Q. No.	D.R.	I.D.	Total	Sr. No.	Q. No.	D.R.	I.D.	Total	Sr. No.	Q. No.	D.R.	I.D.	Total	Sr. No.	Q. No.	D.R.	I.D.	Total
1.	1	X	X	X	48.	48				95.	95	X	X	X	142.	142			
2.	2	X	X	X	49.	49		X	X	96.	96	X	X	X	143.	143			
3.	3		X	X	50.	50				97.	97	X		X	144.	144			
4.	4	X	X	X	51.	51				98.	98				145.	145			
5.	5				52.	52	X		X	99.	99	X		X	146.	146			
6.	6				53.	53				100.	100				147.	147			
7.	7		X	X	54.	54	X		X	101.	101	X		X	148.	148		X	X
8.	8	X	X	X	55.	55				102.	102				149.	149			
9.	9		X	X	56.	56				103.	103		X	X	150.	150			
10.	10				57.	57				104.	104		X	X	151.	151		X	X
11.	11		X	X	58.	58				105.	105		X	X	152.	152			
12.	12		X	X	59.	59	X	X	X	106.	106		X	X	153.	153			
13.	13	X	X	X	60.	60	X	X	X	107.	107	X		X	154.	154	X	X	X
14.	14				61.	61				108.	108		X	X	155.	155	X		X
15.	15				62.	62	X	X	X	109.	109				156.	156	X		X
16.	16	X		X	63.	63		X	X	110.	110	X	X	X	157.	157		X	X
17.	17				64.	64		X	X	111.	111		X	X	158.	158			
18.	18	X	X	X	65.	65				112.	112		X	X	159.	159			
19.	19				66.	66				113.	113		X	X	160.	160			
20.	20				67.	67				114.	114		X	X	161.	161		X	X
21.	21	X		X	68.	68				115.	115		X	X	162.	162		X	X
22.	22	X		X	69.	69				116.	116		X	X	163.	163			
23.	23				70.	70				117.	117		X	X	164.	164			
24.	24				71.	71				118.	118				165.	165	X	X	X
25.	25				72.	72				119.	119				166.	166			
26.	26		X	X	73.	73	X		X	120.	120		X	X	167.	167			
27.	27				74.	74				121.	121				168.	168			
28.	28				75.	75				122.	122				169.	169			
29.	29	X		X	76.	76				123.	123		X	X	170.	170			
30.	30				77.	77	X		X	124.	124				171.	171	X	X	X
31.	31	X	X	X	78.	78	X	X	X	125.	125				172.	172			
32.	32				79.	79				126.	126	X		X	173.	173		X	X
33.	33		X	X	80.	80				127.	127		X	X	174.	174		X	X
34.	34		X	X	81.	81		X	X	128.	128	X	X	X	175.	175		X	X
35.	35		X	X	82.	82				129.	129		X	X	176.	176		X	X
36.	36		X	X	83.	83				130.	130		X	X	177.	177			
37.	37		X	X	84.	84	X		X	131.	131		X	X	178.	178			
38.	38		X	X	85.	85				132.	132				179.	179			
39.	39	X	X	X	86.	86	X		X	133.	133		X	X	180.	180		X	X
40.	40	X	X	X	87.	87				134.	134				181.	181			
41.	41	X	X	X	88.	88				135.	135		X	X	182.	182		X	X
42.	42	X	X	X	89.	89				136.	136		X	X	183.	183		X	X
43.	43	X	X	X	90.	90				137.	137		X	X	184.	184		X	X
44.	44				91.	91		X	X	138.	138		X	X	185.	185			
45.	45				92.	92				139.	139		X	X	186.	186			
46.	46	X		X	93.	93				140.	140		X	X	187.	187			
47.	47				94.	94				141.	141		X	X	188.	188	X	X	X

The final test therefore contained 89 questions

which poor students did well or better than the subjects of the upper group and the value is less than 0.30. Such items were also excluded from the test because such items failed to discriminate the abilities of good and poor subjects. A total of 80 questions were eliminated for this reason.

Thus a total of 99 items were discarded. The test items discarded due to various reasons are presented in Table 1.

Conclusion:

– Forty-two items were eliminated on the basis of difficulty rating, which contained items answered correctly by the students below 80 percent and above 20 per cent.

– Eighty- items were discarded on the basis of index of discrimination in which poor students did well or better than upper group.

– The revised test contained 89 objectives type questions in squash for college students of Physical Education.

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