

Construction of an objective knowledge test in handball for professional students

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■ ABSTRACT

This study was undertaken to construct a knowledge test in Handball for the students majoring in physical education. One hundred students of Lakshmbai National Institute of Physical Education, Gwalior were selected as subjects. After setting up the objectives and contents, a test blue print was prepared. The total of 100 items were objective test comparing of multiple choice. On the basis of performance of the subjects, the questions were further subjected to careful item analysis. The statistical techniques employed in item analysis were the difficulty rating and index of discrimination. Fifty five questions were retained by the scholar as forty five questions were deleted depending upon the result of the item analysis. A final of fifty questions were selected from fifty five questions by the scholar for his convenient of study. The split halves method was utilized to establish the reliability of half the test which was 0.79 then the spearman-Brown prophecy formula was used to predict the reliability of the entire test which was 0.88. The reliability of the test was significant at 0.05 level confidence. From the finding of the study it was concluded that 21 items were eliminated from the test result of difficult rating items answered correctly 43 items were discarded on the basis of index of discrimination in which poor students did as well as or better than upper group. Finely 50 items objective knowledge test in Handball for college students in physical education were selected.

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In the modern scientific age and in every field of human endeavour, systematic objective and scientific procedures are followed in accordance with principles based on experience, understanding and application of knowledge of science. The field of games and sports is an exception to this. Knowledge testing represents one of the later developments in physical education measurement originating in 1929 with the publication of a basketball test by Bliss. From this beginning, others test in the same and different activities were developed by different researchers. Recently tremendous emphasis on knowledge testing has evolved from identification of a body of knowledge in physical education. To measure knowledge in physical education activity classes is just as important as knowledge measurement in other

subject's areas (Johnson and Barry, 1982). Evaluation of student's knowledge of rules, strategy, etiquette and other pertinent information should be considered as an integral and vital part of every teaching unit. The acquisition of knowledge is generally recognized as an important outcome of most physical education programmes. One technique of determining the extent to which knowledge content is being learned is a written test. While written test may and should be used for motivation, practice in applying knowledge and for discovering pupil's level of ability at the beginning of a course, it is for evidence of progress, or achievement that they are most universally used. Knowledge test may be classified in to two types-standardized and teacher made test. Standardized tests are that which have been scientifically constructed,

posses an accompanying set of norms these meet in criteria of scientific and educational application, teacher made test is constructed by the class teacher for meeting local class situation.

The purpose of this study was to construct an objective knowledge test in Handball for the students majoring in physical education. One hundred students of Lakshmbai National Institute of Physical Education, Gwalior were selected as subjects.

■ METHODOLOGY

Selected subjects were studying for Bachelor degree in Physical Education and their age ranged from 17 to 22 years. All the subjects had attended a regular course in Handball besides all of them had regular games period during which many aspects of games were theoretically explained together with practical implications. The test blue print was prepared keeping in mind the content out line and behavioural objectives. The test blue print has been shown in Table A.

| Table A : Test blue print | |
|---------------------------|-----------------|
| Behavioural objectives | Number of items |
| History | 20 |
| Terminology | 10 |
| Rules and regulation | 50 |
| Techniques and tactics | 20 |

After the preparation of questionnaire, it was consulted with few friends, that helped the researchers to detect major and technical fault in language, instructions etc, and a logical sequence was made for the questions. It helped to make each question precise, relevant clear and easy to understand so that the respondent was not put under pressure while filling the questionnaire. The test items consisted of 100 objective type questions and all were multiple choice type. The test was first administered to 20 students in order to determine clarity to question, items. On the basis of this question items were refined and careful analysis was made by experts. Then a final test was administered to 100 students. There were 100 objectives type questions and almost all the students had answered the entire item within the allotted time of 60 minutes. On the basis of the scores, their questions were further subjected to careful item analysis. The items which were found unsatisfactory after analysis, were rejected, the final form of the test consisted of 100 questions.

Item analysis was used to make decision about individual items within the test as well as the worthiness of the test as a whole. For this purpose, the difficulty rating and index of discrimination were employed. Split halves methods was used to insure the reliability of the test items and the content validity

was assumed for the test.

■ OBSERVATIONS AND DISCUSSION

For construction of an objective knowledge test in handball for professional students, a total 100 objective type questions were included in the initial test and all students were given ample instructions before administering the test. All questions carried equal marks and the maximum marks were 100.

Item analysis was used to make decision about individual item within the test as a whole. Following procedures were employed, such as difficulty rating and index of discrimination:

Difficulty rating :

The findings of the difficulty rating questions answered correctly by more than 80 per cent of subjects who were judged to be too easy and those answered correctly by less than 20 per cent subjects were considered to be difficult. On the basis of this, a total of 21 test items were eliminated form the test. The items discarded on the basis of difficulty rating were :

11, 15, 18, 19, 26, 30, 39, 40, 48, 50, 55, 56, 57, 63, 69, 72, 74, 86, 98, 99, 100.

Index of discrimination :

The finding of the index of discrimination indicated those questions in which poor students did well or better than the subject of the upper group. Such items were also excluded form the test, because such items failed to differentiate the abilities of good and poor subjects, total 43 items were eliminated for this reason. The items discarded were:

1,2,4,8,11,12,17,18,19,21,25, 26, 30, 39, 40, 43, 48,5 0,5 2,55, 56, 57, 59, 60, 63, 67, 68, 69, 70, 71, 74, 77, 80, 81, 84, 86, 88, 89, 94, 96, 98, 99,100.

Thus, a total 55 items were selected after elimination of 45 items on the basis of difficulty rating and index of discrimination.

Establishment of reliability and validity :

Test items that is for the half of test was 79 which yields a reliability coefficient of .88 for the entire test and the validity of the test was established on the basis of constructed items. Each selected items was constructed after sufficient deliberation among experts further after difficulty rating and index of discrimination inappropriate items were discarded. So validity of the test items was established as content as well as construct validity.

The findings of the study indicated that the degree of difficulty in rating for the test questions was ranged from 0.05 to 0.86. These questions were answered correctly by more than 80 per cent of subjects which were judged to be too easy and were eliminated. Similarly those questions which were answered correctly by less than 20 per cent subjects were

considered too difficult and were eliminated. A total of 21 test items were eliminated from the test as a result of difficulty rating.

Index of discrimination indicated an elimination of those questions in which lower students did as well as or better than the students of upper group. Such items were also excluded from the test because, such items failed to differentiate the abilities of good and poor subjects. A total of 43 items were eliminated for this reason.

Thus, a total of fifty items were discarded. The final test comprised of a total of fifty questions which were to be answered by the subjects in 30 minutes.

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