



Knowledge Test in Artistic Gymnastics for Allahabad Gymnasts

KEYWORDS

Dr. Suhail Raza

Assistant Professor, Department of Physical Education, PPN College, Kanpur, U.P

ABSTRACT *In the modern scientific age and in every field of human endeavour systematic objective and specific procedures are followed in accordance with principles based on experience, understanding and application of knowledge of science. The acquisition of knowledge is generally recognized as an important outcome of most physical education programme. Measures of knowledge in physical education activity classes are just as important as knowledge measurement in other subjects' areas. Evaluation of student knowledge regarding rules, strategy, etiquette and other information should be considered as an integral and vital part of every teaching unit. Aim of the study is to develop a knowledge test in artistic gymnastics for Allahabad gymnasts. Subjects: 40 male and female gymnasts were selected from Allahabad gymnasium, U.P. Test: A total 80 objective type question were included in the initial test. Statistics: All the questions were subjected to the item analysis. Item analysis i.e. difficulty rating and index of discrimination was used to make decision about individual item within the test a whole. Results: Item analysed by difficulty rating a number of 17 items and according to index of discriminated a number of 40 items were eliminated from the knowledge test. Conclusion: Thus a total of 41 items were discarded due to various reasons.*

Introduction

The rapid progress in the field of games and sports like athletics, hockey, cricket, soccer etc. has taken place and their international achievement have been possible only due to research, experimentation and application of scientific knowledge. Evaluation of students' knowledge of rules, strategy, etiquette and other information should be considered as an integral and vital part of every teaching unit. Evaluation in physical education cannot be completed without the use of knowledge test. Evaluation serves as a means of determining how successfully we as teachers have been meeting our objectives. The testing and grading methods play an important role in order to assess the progress and achievement of the children. Knowledge testing represents one of the later developments in physical education measurement oriented in 1929 with the publication of a basketball test by BLISS from the beginning. The knowledge test is the test designed to measure what an individual knows about a particular subject, distinguish from aptitude and physical performance test. Knowledge test may be classified into two types, standardized and teacher made test. Standardized test are that have been scientifically constructed process and accompanying set of norms. The teacher made test is constructed by the class teacher for meeting local class situation. The young children were trained in gymnastics with a primary purpose to develop "man of Action". Gymnastics is a technical, graceful and very complex in nature so the knowledge of the gymnastics is must to enhance the performance of an individual and also to reduce the chances of injuries. People of India used to performed gymnastics exercises for physical and mental fitness. The "asana" practiced by the ancient Indians were form of gymnastic exercises. In India apparatus gymnastics was started by the Britishers near to 20th century. Today, gymnastics are more competitive in nature and lots of changes are occurred. This changes are made because to perform difficult elements which includes multirotational and multidimensional skills. Gymnastics is a technical and graceful sport that's why researcher is interested in construct of a gymnastics knowledge test.

Aim of the study

The aim of the study was to construct a knowledge test in gymnastics for university level players.

METHODOLOGY

Subjects

For the purpose of the study 40 male and female gymnasts were selected from the gymnastic centre of Allahabad, U.P. and they were considered as my subjects.

Test Blue Print

The test blue print was prepared keeping in view of the content out line and behavioural objectives. The test comprised of various aspects in the sports of gymnastics. The weightage of percentages to each part of the content area and objective area are to be emphasized.

S.No	Behavioural Objectives	Number of Items
1.	Technical Regulation	20
2.	History and Development	18
3.	Measurement	15
4.	Code of Point	10
5.	Skill and Technique	08
6.	Modern Trends	04
7.	Others	05

Development of Questionnaire

The test items constructed of 80 objective type and all questions are consisted of multiple choice. The test items were chosen as per the test blue print. These items were subjected to careful analysis of the experts for rectification of the possible errors, so that the test does an accurate job.

Administration of Questionnaire

Before administrating the test, two intensive instructional classes were conducted by the research scholar for the subjects to cover various aspects of the sports as emphasized in the test blue print. A test was consisted of 80 objective type questions of 80 minutes duration to administrated on 40 students in order to determined clarity of questions. All questions carried equal marks and maximum marks were 80. One point was awarded for each correct

response. The sum of total number of correct responses was the final score of each subject. On the basis of this the questions were developed and all the data were collected from the gymnasts of Allahabad centre.

Item Analysis

Item analysis was used to make decision about individual item within the test a whole. Following procedure was employed:

Difficulty Rating

Difficulty rating was determined by the percentage of student who had chosen the correct response for particular test item. The formula used for computing the difficulty rating was

$$DR = \frac{P \times 100}{N}$$

Where,

DR= Difficulty Rating,

P = Number of subjects answered an item correctly,

N = Number of subjects in upper and lower group,

Index of Discrimination

Index of discrimination was used to provide information about low and high performers on a specific test who answered each item correctly. For index of discrimination the 29 percentage of subjects each from the top and bottom respectively who appeared in the test were used. The formula used for computing the Index of discrimination was

$$ID = \frac{C_u - C_l}{N_u}$$

Where,

ID= Index of Discrimination,

C_u = Number of correct response in upper 29 percentage of subjects,

C_l = Number of correct response in lower 29 percentage of subjects,

N_u = Total number of subjects in upper group,

Reliability of the Data

The reliability of the test was established by using split halves method, a correlation between the correct odd and even numbers and item were calculated by using Spearman Brown formula.

$$R_{wt} = 2r_{ht} / 1+r_{ht}$$

Where:

R_{wt} = Reliability of the whole test,

r_{ht} = Reliability of the half test,

The value of co-efficient of correlation of odd and even number with selected 40 test items was .79 which field reliability co-efficient of 0.88 for the entire test.

Discussion of Finding

The finding of the study indicates that the difficulty rating for the test question ranged from 4 to 100 percent. Thus question answer correctly by more than 80 percent of subjects were judged to be too easy and thus answered correctly by less than 20 percent of students were considered to be difficult. Therefore such question having difficulty rating above 80 percent and below 20 percent were eliminated from the test. A total of 17 items were eliminated from the knowledge test. The index of discrimination has range of +1.00 through 0.00 to -1.00 in actuality the index of discrimination never reaches the plus or minus 1.00 levels. Most measurement experts agree that having an index of discrimination of .30 or above are consider good, where as items with discrimination indexes below .30 need improvement or should be eliminated from the test but for the purpose of the study an index of discrimination of .25 or above are considered satisfactory because of their level of participation. Therefore 40 items were also eliminated on the basis of index of discrimination from the knowledge test. Thus a total of 41 items were discarded due to various reasons.

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