A study on the evaluation criteria of sports performance in a Chinese university based on Internet technology

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Abstract: *The physical education performance of contemporary college students is crucial to every college student's physical health as well as credit grades. And the good or bad sports performance is closely related to the sports evaluation criteria. Relying on Internet technology, this paper takes undergraduates of a domestic university as the research object, adopts a variety of research methods, carries out in-depth research on the evaluation criteria of several items, and develops a more appropriate quantitative evaluation sports scoring standard through analysis and comparison. The experiment shows that the graduation quantitative evaluation sports scoring standards proposed in this paper can meet the graduation assessment needs and better respond to the differences of students' sports quality.*

Keywords: *Sports; Evaluation criteria; Sports performance; Internet technology*

1. Introduction

In higher physical education teaching, the content and standard of physical education performance assessment in colleges and universities is a very important content[1-3]. However, at present, the performance assessment standard of physical education is only divided according to four evaluation grades, too broad evaluation rules are too difficult to meet the demand of quantitative evaluation of college students, and the current graduation quantitative evaluation lacks sports scoring standards, the current method is generally: all sports items are above passing, sports comprehensive score is recorded as passing (full marks); there are failing sports, sports comprehensive score is recorded as failing (zero points). This method does not reflect the differences in different students in sports, it is unreasonable. In addition, the assessment standard is relatively single, which is difficult to match the statistical distribution of the academic year assessment results, and has limited incentive effect on college students to strive towards a higher sports level.

Scholars at home and abroad have deeply studied the problem of PE curriculum evaluation standard[4-6]. Li Tonghui[7] conducted a study on the physical fitness evaluation of national men's basketball athletes, and his index system is composed of a number of first-level indicators and corresponding second-level indicators. The author puts forward the calculation steps and methods of corresponding weights, and describes the research method with individual scoring criteria and comprehensive grade evaluation as an example. Taking the 2400-meter running scores of 242 junior high school students (including 126 boys and 116 girls) in four middle schools in Changzhou city as the original data, Shi Lei[8] formulated the evaluation standard of 2400-meter running through the methods of literature data, measurement and evaluation and progressive scoring, and used the progress range scoring method to formulate the scoring standard of relative progress scores. Zhou Feng[9] studied the problem of D-value positioning in the "progressive" scoring method, and focused on analyzing the application problems in the technical assessment and scoring. Lu Li[10] studied the scoring standard and evaluation grade of 12-minute running, and expounded the research method of Tianjin college students as an example. Ma Yinan[11] studied the progressive scoring equation, and especially focused on the reasonable selection of D value. Zhou Tiji[12] and others conducted related research on the scoring problem of track and field decathlon, and analyzed and studied the corresponding scoring table based on the progressive scoring method, and put forward suggestions and suggestions for improvement. Wang Xiangying[13] made relevant research on the scoring in the college entrance examination and focused on the analysis of the scoring criteria of table tennis. Comprehensive assessment standard and the evaluation score of literature, research mainly focused on the public security colleges and

universities, pilots, national athletes and primary and middle school students group of physical assessment standards and evaluation score research, or for physical assessment of the digital test system design research, lack of college students' physical assessment standards and assessment score research. Therefore, this study for the study of college students physical score, hope to fill the blank of this research, be able to adapt to the college students graduate quantitative evaluation requirements, to improve the scientific nature of our college students' physical score and rationality, for our country college students graduate quantitative assessment fair and just, has important theoretical significance and practical value.

2. Research objects and methods

2.1. Research objects

This paper takes the sampling data of the academic year assessment and graduation assessment of a certain undergraduate student as samples, and the sample number is 600, studies the sports performance evaluation and evaluation standards of universities, and formulates the sports scoring standard suitable for the quantitative evaluation of students of a university.

2.2. Research methods

2.2.1. Documentary Law

This study collects, sorts out, analyzes, comments and applies relevant literature through network inquiry, database retrieval, book borrowing and purchase, etc. The literature collection is mainly carried out from the following channels Database search: CNKI Library; University of Utah Library; National Library of China; Peking University Library; Beijing Sport University Library. Through the extensive reading and collation of these documents, the relevant literature articles and the topics involved in this paper are selected. With "sports" and "evaluation" as key words, we searched the CNKI and obtained a number of documents. Through the sorting and screening of these documents, the documents related to the topics involved in this paper were obtained, and these documents were summarized and analyzed.

2.2.2. Expert Interview Method

The interviews in this study were mainly experts in sports theory and physical education. The interview method is a combination of face-to-face interview and written communication. The interview form is mainly open and non-structured interview. The interview content basically covers the main topics of this study, and the interviewees have put forward valuable opinions for this study to different degrees. The key content and core technology of this research are determined, and the research focus and direction suitable for practical needs are defined. The list of personnel is shown in Table 1.

Table 1. List of expert groups

Name	academic title	work unit	Name	academic title	work unit
Zhang xx	Professor	XX University	Mei xx	Professor	XX Academy
Ma xx	Professor	XX Academy	Zhao x	Professor	XX University
Guo xx	Professor	XX University	Li xx	Professor	XX University
Zhao xx	Professor	XX Academy	Kong xx	Professor	XX University
Lin xx	Professor	XX University	Xu x	Professor	XX University
Zhou xx	Professor				

2.2.3. Mathematical statistics

Constantly collect and organize the assessment results and data, using professional software SPSS18.0 to conduct statistical analysis of the data, get the key indicators needed for the research, such as mean, number, median, variance, standard deviation, etc., and then normal distribution analysis. The progressive scoring system is introduced, and the standard scheme for the sports performance evaluation is selected for the university students.

2.2.4. Survey Method

A sample survey was conducted on the students, and the rationality and scientificity of the relevant examination evaluation standard were conducted through the questionnaire survey, and the students' opinions were scientifically demonstrated and reasonably adopted, so as to continuously improve the

satisfaction and accuracy of the evaluation standard.

3. Study results and analysis

3.1. Analysis of the project academic year assessment results

In a university 600 undergraduate students 5000 meters run project year evaluation and graduation evaluation results as samples, the 5000 meters run project evaluation statistical results, using SPSS18.0 software single sample K-S test, get 5000 meters run project year assessment of Q-Q normal probability and Q-Q deviation normal probability diagram, as shown in Figure 1 and Figure 2,5000 meters run project graduation evaluation of Q-Q normal probability diagram and Q-Q deviation normal probability diagram as shown in Figure 3 and Figure 4.
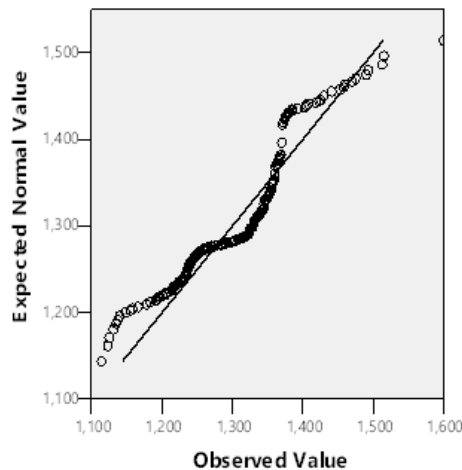

Figure 1: Project academic year assessment of 5000 meters running results of the Q-Q Normal probability map
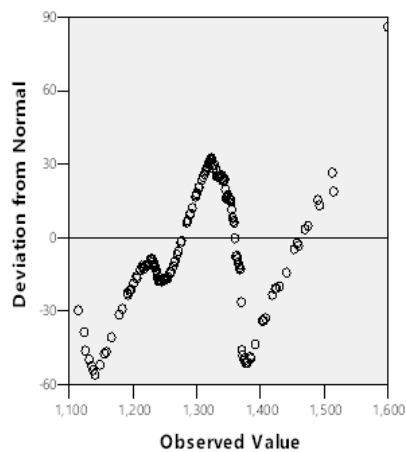

Figure 2: Project academic year assessment of 5000 meters running results the degree of deviation from the normal distribution
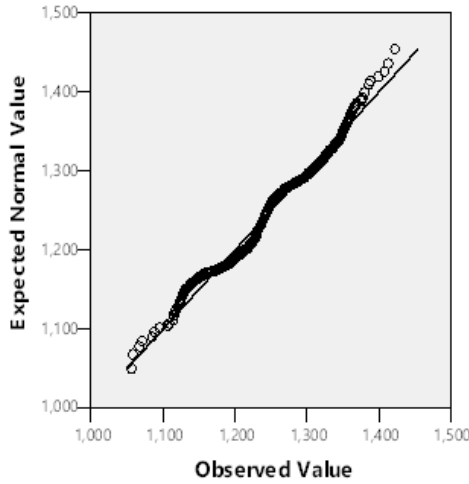
Figure 3: Q-Q normality of 5000 m running result after graduation probability graph
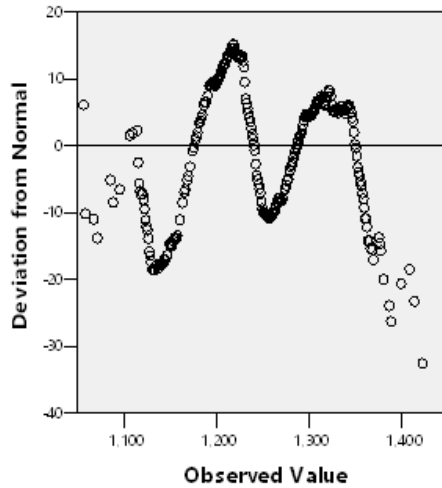

Figure 4: The 5000-meter run in the graduation entrance examination deviated from normal the degree of distribution

The mean score of the academic year of the 5000 m race was 1328.7849 seconds, with a standard deviation of 60.19713 seconds. The mean graduation score of the 5000 m race was 1252.1737 seconds, and the standard deviation was 63.56438 seconds. According to the analysis in Figure 3 and Figure 4, we can see that the 5000 m run in the graduation joint examination is approximately normal distribution. According to the comparison with the results of the project academic year, it can be seen that the graduation assessment is better than the results of the project academic year.

3.2. Scoring criteria based on 80 points and passing points

The passing scoring point 60 is recorded as-S, 80 as S, D value corresponding to-S is 4, and D corresponding to + S is 6. Bring the D value into the progressive scoring formula

$$\begin{cases} 60 = k4^2 - Z \\ 80 = k6^2 - Z \end{cases} \tag{1}$$

Solution to k=2, Z= -28. Bring the parameters k and the constant Z back to the progressive scoring formula

$$y = 2D^2 + 28 \tag{2}$$

The number and proportion of the evaluation grades of the 5000 m running project calculated by the scoring standard 3 are shown in Table 2.

Table 2. Proportion of each grade in the academic year assessment of the 5000 m race project

Grade	Number of people	Proportion
Outstanding	138	23.2%
Good	196	32.9%
Passing	238	40.0%
Fail	23	3.9%

3.3. Scoring criteria based on 80 points and passing points

The median is about arranging the sample in size order to form a sequence, and the sample in the middle of the series is the median. The median is the representative value in the data, which is the representative value in the overall level. In order to play a role in encouraging progress and encouraging advanced, the number of failing and the number of excellent should account for a certain proportion, and the representative median individual should be rated as good. This rule is called the additional rule for the evaluation of progressive scoring criteria based on the median reference point.

According to Table 3, the 5000 m running project is less than or equal to 1309 seconds; good is more than 1309 seconds, less than 1355; pass is more than 1355 seconds, less than 1390 seconds; failure is greater than 1390 seconds; compared with the original assessment standard, the requirement for excellent and good is reduced, but the requirement of passing is increased.

Table 3. Results and score

Results	score	Results	score	Results	score	Results	score	Results	score	Results	score
Within 1269	100	1297	89	1326	79	1355	70	1384	61	1413	54
1269	100	1298	89	1327	79	1356	69	1385	61	1414	54
1270	99	1299	88	1328	78	1357	69	1386	61	1415	53
1271	99	1300	88	1329	78	1358	69	1387	61	1416	53
1272	99	1301	88	1330	78	1359	68	1388	60	1417	53
1273	98	1302	87	1331	77	1360	68	1389	60	1418	53
1274	98	1303	87	1332	77	1361	68	1390	60	1419	53
1275	97	1304	87	1333	77	1362	68	1391	59	1420	52
1276	97	1305	86	1334	76	1363	67	1392	59	1421	52
1277	97	1306	86	1335	76	1364	67	1393	59	1422	52
1278	96	1307	85	1336	76	1365	67	1394	59	1423	52
1279	96	1308	85	1337	75	1366	66	1395	58	1424	51
1280	96	1309	85	1338	75	1367	66	1396	58	1425	51
1281	95	1310	84	1339	75	1368	66	1397	58	1426	51
1282	95	1311	84	1340	74	1369	66	1398	58	1427	51
1283	94	1312	84	1341	74	1370	65	1399	57	1428	50
1284	94	1313	83	1342	74	1371	65	1400	57	1429	50
1285	94	1314	83	1343	73	1372	65	1401	57	1430	50
1286	93	1315	83	1344	73	1373	64	1402	57	1431	50
1287	93	1316	82	1345	73	1374	64	1403	56	1432	50
1288	92	1317	82	1346	72	1375	64	1404	56	More than 1432	Less than 50
1289	92	1318	82	1347	72	1376	64	1405	56		
1290	92	1319	81	1348	72	1377	63	1406	56		
1291	91	1320	81	1349	72	1378	63	1407	55		
1292	91	1321	81	1350	71	1379	63	1408	55		
1293	91	1322	80	1351	71	1380	62	1409	55		
1294	90	1323	80	1352	71	1381	62	1410	55		
1295	90	1324	80	1353	70	1382	62	1411	54		
1296	89	1325	79	1354	70	1383	62	1412	54		

4. Conclusion

This paper quantify the necessity of sports evaluation and the first four grade sports scoring standard detailed discussion and analysis, that the four grade rating standard is too broad, reflect the difference between different students in sports, and the purpose of graduation quantitative evaluation,

established progressive criteria based on the median reference point and based on 80 points and pass point, the simulation results show that the established model can better meet the evaluation needs.

Acknowledgments

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