

Analysis of Track and Field Results in Heilongjiang Province

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Abstract

In this paper, the results of the top eight and the top three in the first group of the consecutive three colleges and universities track and field championships from 2016 to 2018 in Heilongjiang Province were statistically and analytically analyzed by the methods of literature, interview and mathematical statistics. After analyzing and studying the results of group a of the three students' track and field championships, the changing rules of results are presented. The plans and decisions for track and fields are made by using the rules. It has a certain guidance meaning for arranging training plans and competitions.

Keywords

Heilongjiang Province; Colleges and universities; track and field; Results.

1. INTRODUCTION

As one of the main contents of physical education in colleges and universities, track and field sports play an active role in promoting students' physical qualities such as strength, speed, endurance, flexibility and agility. They play an irreplaceable role in college sports. In order to further understand the development situation of track and field sports in the colleges and universities of Heilongjiang Province, the participation in the three students' track and field championships of different colleges and universities are counted, and the coaches' views are surveyed. According the trends of results, the overall situation of track and field sports in universities are analyzed. It is a valuable reference for the sustainable development of sports training in colleges and universities.

2. RESEARCH OBJECTS AND METHODS

2.1. Research Objects

The research objects are the results of the top eight and the top three in the first group (undergraduate colleges and universities) of the consecutive three colleges and universities track and field championships from 2016 to 2018 in Heilongjiang Province.

2.2. Research Methods

(1) Literature method. The following literatures and materials are consulted: the materials of colleges and universities track and field championships from 2016 to 2018 in Heilongjiang Province such as programs, score books and so on, the relevant materials of the three years' national university student track and field championships, the relevant literatures in the online library.

(2) Interview method. The issues and reviews of some coaches and referees from colleges and universities of Heilongjiang Province are sorted out, analyzed and studied by the telephone, WeChat and other means.

(3) Mathematical statistics.

In this paper, Microsoft excel, DPS and other data processing softwares are used to conduct statistical analysis on the data collected from the three colleges and universities track and field championships from 2016 to 2018 in Heilongjiang Province.

3. RESULT ANALYSIS

3.1. The Participation of Colleges and Universities

The participation of colleges and universities are listed in Table 1.

Table 1. The participation in the track and field championships of different colleges and universities of Heilongjiang Province from 2016 to 2018

year	Registrations of colleges and universities		participants		total
	total numbers	participation	male	female	
2016	38	13	120	110	230
2017	38	15	128	103	231
2018	38	16	132	119	251

As can be seen from Table 1, there are 38 general undergraduate colleges and universities in Heilongjiang Province (group A in the competition). The participation rates are respectively 34%, 39% and 42% in the last three competitions. It shows the number of participants increases year by year. According to the rules of the competition, each team can only register 30 athletes. However, only 230, 231 and 251 athletes can participate in each competition, accounting for 59%, 51% and 52% of the full number of participants. Although the number of participating teams has increased, the proportion of participating athletes has decreased. Among the participating athletes, male athletes account for 53% and female athletes account for 47%. The proportion of female athletes participating in the three competitions shows a downward trend, but the range is not large. The reason can be that colleges and universities in the province at present pay insufficient attention to sports. Although athletics is a simple way of physical exercise, but the few students participate in the competition, and student's level are so lower that they can not reach the requirements of competition. Furthermore, most of the female students do not like track and field sport, and they can't pay more hard training in track and field.

Table 2. The mean scores of the top eight in some sports

sports	unit	male			female		
		2016	2017	2018	2016	2017	2018
100 meters	sec.	11.806	11.679	11.581	14.209	13.796	13.859
400 meters	sec. min.	54.04	53.33	53.68	01:09	01:09	01:05
1500 meters	min.	04:41	04:29	04:36	05:51	05:47	05:31
5000 meters	min.	17:43	17:08	17:18	22:33	22:44	21:41
400 meters hurdles	min.	01:04.78	01:03.24	01:03.71	01:22.09	01:19.91	01:18.83
high jump	m	1.75	1.69	1.79	1.32	1.35	1.34
long jump	m	6.32	6.17	6.37	4.35	4.35	4.46
shot put	m	10.57	9.66	11.32	8.66	8.81	9.74

3.2. Analysis of the Mean Scores of the Top Eight Athletes in Some Sports

The mean scores of the top eight athletes in some sports are listed in Table 2.

As can be seen from the Table 2, the overall results have improved, but not by much. From the distribution, the short distance sports have been improved better, while the middle and long distance running is generally improved, except the men's 5,000m. The results of men's 100m rise from 11.806 in 2016 to 11.581 and it reaches the national second-class athlete standard. The results of track sports are better than those of field sports. All the track sports have improved by a certain extent from 2016 to 2018. The results of the long jump have improved by a greater extent than those of the high jump. The track and field levels of colleges and universities in Heilongjiang Province as a whole are in progress. At the same time, There are unbalanced development among the track and field sports level of males and females, field and track sports, sprint and long runs, strong technical and the general sports. The results of males are better than females, track is better than field, the general sports are better than the technical sports.

3.3. Analysis of the Results of the Top Three Athletes in Some Sports

The results of the top three athletes in some sports are listed in Table 3 and Table 4.

Table 3. The results of the top three athletes in some sports (track)

sports	rank	male			female		
		2016	2017	2018	2016	2017	2018
100 meters	first	11.36	11.35	11.40	13.97	13.08	13.27
	second	11.70	11.49	11.47	13.98	13.55	13.59
	third	11.72	11.56	11.51	14.12	13.76	13.63
400 meters	first	52.42	51.03	51.24	01:05	01:04	01:01
	second	52.43	52.12	52.50	01:05	01:06	01:02
	third	53.81	52.63	52.78	01:07	01:08	01:05
1500 meters	first	04:31	04:24	04:27	05:21	05:32	05:09
	second	04:31	04:24	04:32	05:42	05:36	05:12
	third	04:35	04:27	04:34	05:45	05:48	05:30
5000 meters	first	17:17	16:56	16:55	20:03	21:36	19:20
	second	17:20	17:01	17:09	22:31	21:57	20:07
	third	17:43	17:07	17:11	22:35	22:03	21:27
400 meters hurdles	first	01:03.07	01:00.48	01:00.16	01:12.36	01:12.00	01:12.72
	second	01:03.84	01:02.05	01:02.33	01:14.52	01:12.40	01:15.76
	third	01:04.07	01:02.89	01:03.11	01:16.37	01:14.89	01:15.82

Referring to the track and field athletes technical grading standards, from Table 3 and Table 4, it can be seen that the few athletes reach the national second-class athlete standard. Only 28 in 162 athletes reach the second-class athlete standard, account for 17% of the total, while most of athletes do not reach the second-class athlete standard, even with individual sports athletes do not reach third-class athlete standard. Seventeen males reach the second-class athlete standard in sprint sport, and two females reach it. Four males reach the second-class athlete standard in high jump sport. Four males reach the second-class athlete standard in long jump sport and one women reach the second-class athlete standard in long run sport. It can be seen that the development of male sprint in universities of Heilongjiang Province is far better than

other sports. The the male's 100 meters and 400 meters sports can be further developed as the key sports of track and field for college students in Heilongjiang Province. Long-distance sports, throwing sports and female's jumping sports are the weak, which should be promoted and improved in a targeted way. On the whole, There is still a big gap between the results of Heilongjiang Province and others.. The main reasons are analyzed as follows: firstly, normal training cannot be conducted outside for the cold weather in Heilongjiang Province. The normal outdoor training time is only about five months every year except holidays, which affects the improvement of sports results. Secondly, students' interest in track and field decline. With the improvement of economic level, the extensive developments of various sports also have a great impact on track and field. This impact have occurred before students entered universities, so it is difficult for students to establish interest in track and field after entering universities.

Table 4. The results of the top three athletes in some sports (field)

project	rank	male			female		
		2016	2017	2018	2016	2017	2018
high jump	first	1.83	1.79	1.87	1.39	1.47	1.45
	second	1.80	1.79	1.85	1.36	1.43	1.45
	third	1.80	1.75	1.85	1.33	1.39	1.43
long jump	first	6.82	6.48	6.62	4.71	4.64	4.77
	second	6.52	6.42	6.55	4.55	4.51	4.69
	third	6.34	6.28	6.45	4.45	4.48	4.64
shot put	first	11.49	11.61	12.35	9.96	10.08	10.60
	second	10.99	11.07	12.11	8.82	9.64	10.60
	third	10.84	11.03	11.57	8.77	9.41	10.24

4. CONCLUSIONS AND SUGGESTIONS

4.1. Conclusions

(1) The levels of track and field sports in colleges and universities of Heilongjiang Province have been improved slightly in recent years, but there is still a certain gap with other provinces. The overall results are still hovering close to the level of the second-class athlete, which is still relatively low. Therefore, it is difficult to get good results in the national college students' track and field competitions.

(2) The developments of various track and field sports in colleges and universities of Heilongjiang Province are not balanced. Females' sports, field sports and technical sports are not ideal. Only 3 females have reached the level of the second-class athlete, while no one can reach the level of the second-class athlete in shot put and hurdle sports with high technical requirements.

(3) The popularity of track and field sports is not good in colleges and universities in Heilongjiang Province. There are few schools that can conduct track and field training all year, and less than 50% of the schools participate in the provincial competitions.

(4) Most of universities in Heilongjiang Province do not pay enough attention to track and field sports, with less investment and no more reasonable reward and punishment systems for coaches and athletes, and the treatment of athletes and coaches is very low.

4.2. Suggestion

(1) The publicity of track and field sports should be strengthened, all kinds of systems should be established and policy supports should be provided.

(2) More and richer track and field competitions should be carried out in colleges and universities, more students interested in and participate in track and field.

(3) The construction of coach echelon should be strengthened, and responsible young teachers who love track and field can join the coach team. Appropriate trainings for coaches at the provincial level are held. Schools encourage and support coaches to participate in better national training, and their professional level can be constantly improved.

(4) Colleges and universities should develop the disadvantaged sports in a targeted way on the premise of ensuring the sustainable development of the advantageous sports, so as to comprehensively improve the level of track and field sports.

(5) The financial investment in track and field training and competition should be gradually increased, and should be gradually developed from basic guarantee to sufficient development. In addition to the normal investment of schools, the strength of society or alumni can also be tapped, and the channels of financial investment should be broadened.

(6) Some simple indoor training places can be established to increase annual training time.

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REFERENCES

- [1] H.B. Sun, Z.C. Li, H. Li, Z.K. Liu, D.Y. Wang. Study on the Development of Track and Field Sports in Colleges and Universities in Guizhou——Analysis on Competition Results of Track and Field in the 3th National University Games in Guizhou Province, *Guizhou Sports Science and Technology*, vol. 129(2017), No. 4, p. 30-35.
- [2] X.Z. Li. Comparative Analysis on Competition Results of Track and Field in the 9th National University Games in Hunan Province, *Bulletin of Sport Science and Technology*, vol. 21 (2013), No. 11, p.30-31.
- [3] Y.B. Li. Analysis of the Results of the Group B on the Track and Field Competition in the 12th University Games of Zhejiang province and Development countermeasures, *Journal of Jilin Institute of Physical Education*, vol. 24(2008), No. 6, p. 33-35.
- [4] L. Wang. Analysis of the Athletics Competition Results at the 8th National University Games, *Journal of PLA Institute of Physical Education*, vol. 27(2008), No. 3, p. 67-69.