

Research on the Effect of College Students' Physique Test under the New "Standards"

—Take the example of South China Agricultural University

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Abstract: Through the literature data method, statistical analysis, and random interviews, the test data of the undergraduate students participating in the physical fitness test of South China Agricultural University from 2015 to 2017 were investigated, analyzed, and calculated to try to find out the characteristics and changes of students' physical health under the conditions of combining the students' physical measurement and implementation programs, in order to seek better corresponding strategies and improve students' physical health. The results showed that the students of South China Agricultural University had the best physical function (vital capacity) and the flexibility of physical quality (the sitting body forward flexion) were the best, followed by sprint ability, but the endurance events, the lower limb explosive force (standing long jump) and the male upper limb items (upwards) were poor, especially for the boys' upper limb projects. Under the new standard, the implementation of the school physical examination documents has a great effect on the students' test results, improved the excellent and good proportion, promoted the overall test results of the girls, and the girls' physical behavior was more clear and conscious; the grades of the lower grade students in the school were compared to the high grades. The results of the students are better than those of the boys. The rationality and scientificity of the test policy making direct the students' trends and make the students more active. Based on the problems, the school should strengthen the students' attention to their own physique, improve the measures of the school physical test, and make full use of the combination of information and physical exercise to actively intervene in the students' physical exercise behavior, promote the physical training of the senior students, and establish a related test and exercise Mutual Aid Club.

1. Introduction

On July 18, 2014, the Ministry of Education issued the National Student Physical Health Standards (Revised in 2014) (hereinafter collectively referred to as the Standards). The Standards stipulate that students who have achieved good test scores and above can participate evaluating and appraising prizes. Those who have achieved excellent grades will be awarded sports credits; when students of ordinary high school, secondary vocational school, and regular college graduates, those who score less than 50 points in the Standards test will be treated as graduates or graduates. The explicit provisions of the Standards demonstrate the country's great concern for students' physical health and put forward clear requirements for this. "Health first" and "Youth is strong, then the country is strong" has always been the concept of our country's education.

In 2015, under the guidance of the implementation of the new Standards, South China Agricultural University formulated the implementation plan for the Standards of the school (for trial implementation). The program stipulates that student test scores be included in student files, and student achievement grades of 2015 and beyond an important basis for students' appraisal and evaluation. When they graduate, students whose test scores are less than 50 can be treated as closed (due to a sick or disabled student, they can submit an exemption application to the school with a hospital certificate and be approved after passing the examination.) Whether the implementation of the program affects the student's sports behavior needs to be evaluated by the results of the data. Through analysis of the test data for the three years of 2015, 2016, and 2017, it is tested that the

programs implemented by the school affect the students' sports behavior and seek ways to better resolve the physical fitness tests.

2. Research Objects and Methods

2.1 Research Object

The students of the four grades of the South China Agricultural University in 2015, 2016, and 2017 were selected as the study subjects, of which 35,170 were in 2015, 16,754 were boys and 18,416 were females; the total number of samples was 34,923 in 2016 There were 16,195 boys and 18,728 girls. The total number of samples in 2017 was 34,987. The number of boys was 15,986, and the number of girls was 1,9001.

2.2 Research Methods

2.2.1 Literature Data Method

This research uses online search engines to read and analyze more than 40 articles about "Physical Quality Test", "College Fitness Test", and "National Fitness Standards" in Chinese data search such as Chinese Academic Journal Database and Wei Pu Chinese Periodical Database. The library downloads papers closely related to the dissertation for review, serving as a reliable theoretical basis for research.

2.2.2 Data Statistics

The survey data were statistically analyzed by using EXCEL and SPSS17.0 software.

2.2.3 Random Interviews

Through random interviews with 354 undergraduate students in South China Agricultural University to test the relevant issues, and analysis and summary.

3. Research Results and Analysis

Table 1 Effect test of each test item in 2015, 2016, and 2017

Intersubjective effect test		Excellent (≥ 90)	Good(80~89)	Passed(60~79)	Failed ≤ 60	Qualified Rates ≥ 60
Years	F	5.665	10.118	10.357	3.594	3.753
	Sig.	0.007	0.000	0.000	0.038	0.033
Groups	F	20.114	50.729	181.107	9.37	1073.228
	Sig.	0.000	0.000	0.000	0.001	0.000

Note: Multivariate analysis of variance is performed by recording the number of people in each item class.

Table 2 Multivariate Tests for Years/Groups of Test Items in 2015, 2016, and 2017

		Excellent (≥ 90)		Good(80~89)		Passed(60~79)		Failed ≤ 60		Qualified Rates ≥ 60	
		Averages	Sig.	Averages	Sig.	Averages	Sig.	Averages	Sig.	Averages	Sig.
2015		2527.81		2641.06		14651.19		2187.38		19794.06	
2016		2869.31		2916.69		12884.56		2744.31		19082.63	
2017		3758.25	0.445	3758.25	0.294	12282.88	0.273	1867.13		19995.06	
Girls		2238.17		2724.94		12202.17		1546.06		17165.28	
Boys		2238.17	0.838	2110.39	1.000	9306.89	1.000	2586.39		13725.17	1.000
Total		5614.33		5168.33		20827.92		2866.42	0.412	32160.00	

Note: Multivariate analysis of variance is performed by entering the number of years/groups in each class.

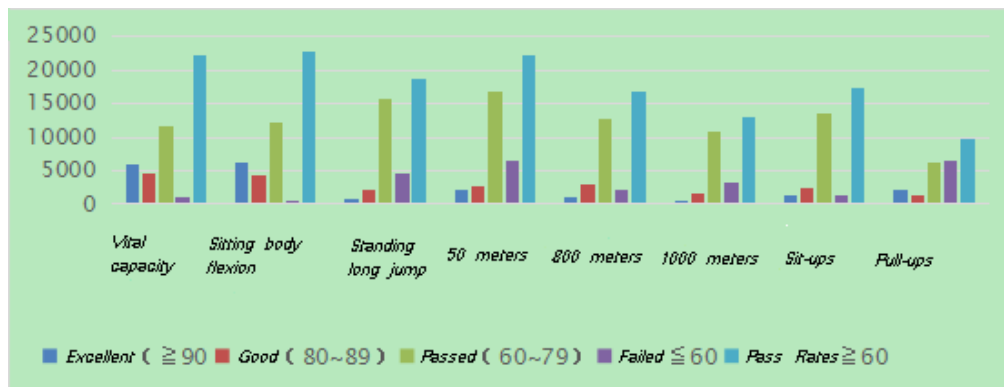


Figure 1. Mean chart of each test item in 2015, 2016, and 2017

Table 1 shows that the P values of Excellent, Good, Passed, Failed, Qualified Rates were 0.007, 0.000, 0.000, 0.038, and 0.033 respectively, all less than 0.05, indicating that each test item had a grade of three years. The differences were significant. The P-values for Excellent, Good, Passed, Failed, Qualified Rates for each group was 0.000, 0.000, 0.000, 0.001, and 0.000 respectively, and all were less than 0.05, indicating that there were significant differences between male and female students.

Table 2 shows that the excellent and good mean comparison probability P values in 2015 and 2016 are 0.445 and 0.294, respectively, which is greater than 0.05. It is considered that there is no significant difference between 2015's and 2016's rate of students getting excellent goal and significant difference compared with that of 2017. The pass mean comparison probability P values of 2016 and 2017 is 0.273, larger than 0.05. There is no noteworthy difference between the 2016's and 2017's rate of students passing the test, which is significantly different from that of 2015. The failing average comparison probabilities of the 2015 and 2017 were 0.294 and 0.569, respectively, which were greater than 0.05. There was no significant difference between the 2015's and 2017's rate of students failing the test, which was significantly different from that of 2016. The mean values of boys and girls show that there is no significant difference between excellent boys and girls but significant differences in good, passing and failing rate.

From the analysis of Tables 1 and 2 above, it can be observed that each grade of each test item in the three years is different. The performance of each item is gradually improved, and basically it is increasing year by year. The overall achievement of girls is better than that of boys.

Figure 1 shows that the student's pass rate in vital capacity, sit and reach, and 50-meter dash is relatively high. The excellent rate and good rate of vital capacity and sit and reach are higher than those of other items and their fail rate is lower than that of other items; The excellent rate and good rate of standing broad jump are relatively low, and its fail rates are merely the same as that of 50 meters dash, but rather different from that of other projects;

The excellent rate and good rate of girls' and boys' endurance running are not high, girls' slightly higher than boys', boys' fail rate higher than girls' and girls' pass rate higher than boys'. The excellent rate and good rate of girls' sit-ups are not high, and most of them stay at pass grade. Boys are weak in pull-ups, fail rate slightly higher than the pass rate, and excellent and good rate is relatively low.

Table 3 Effect Test of Student's Overall Performance in 2015, 2016, and 2017

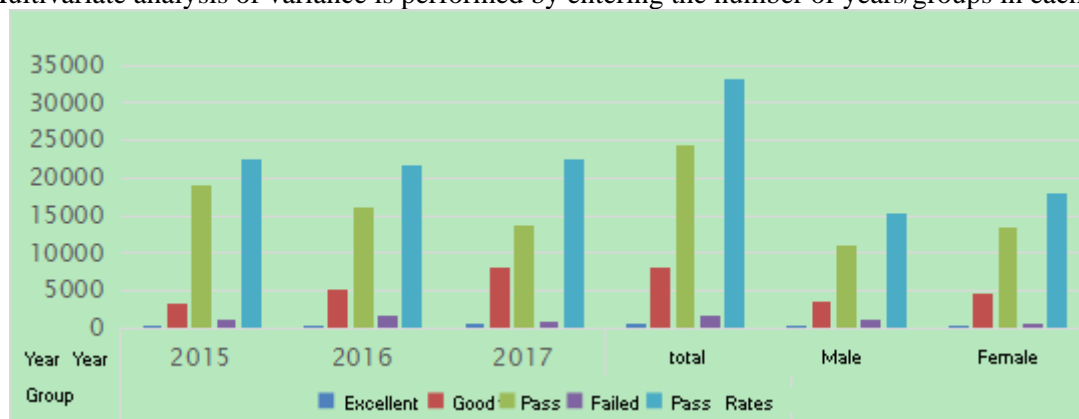
Effect	test	between	excellent(≥ 90)	good(80~89)	pass (60~79)	Fail ≤ 60	Pass rate ≥ 60
subject							
year	F		12.400	12.714	15.685	15.33	4.712
	Sig.		0.019	0.018	0.013	0.013	0.089
group	F		5.125	13.097	114.455	29.779	2063.888
	Sig.		0.049	0.018	0.000	0.004	0.000

Note: Multivariate analysis of variance is performed by entering the total number of people in each grade during three years

Table 4 Mean Analysis of Years/Groups for 2015, 2016, and 2017

		Excellent(90)	Good(80~89)	Pass (60~79)	Not Pass ≤ 60	Pass Rate ≥ 60
Year	2015	112.667	3321.333	18964.000	1048.667	22398.000
	2016	290.667	5086.000	16234.000	1671.333	21610.667
	2017	710.667	8036.667	13680.000	897.333	22427.333
	Total	557.000	8222.000	24439.000	1808.667	33218.000
Group	male	393.000	3649.333	11132.000	1137.333	15174.333
	female	164.000	4572.667	13307.000	671.333	18043.667

Note: Multivariate analysis of variance is performed by entering the number of years/groups in each class.



Note: Multivariate analysis of variance is performed by entering the number of years/groups in each class.

Figure 2. Analysis of averages of each level in 2015, 2016, and 2017

Table 3 shows that the excellent, good, passing, and failing probability P values. The test results of 3 years were 0.019, 0.018, 0.013 and 0.013 respectively, all less than 0.05, and the test results of 3 years were excellent, good, qualified and unqualified. Significance. The probability of the pass rate P value is 0.089, greater than 0.05, indicating that there is no significant difference in the pass rate of the three-year test results. P values of excellent, excellent, passed, passed, failed and passed probability of each group were 0.049, 0.018, 0.000, 0.004 and 0.000 respectively, all less than 0.05, and the difference was statistically significant. Table 4 and Figure 2 show that the excellent and good grades in 2015, 2016 and 2017 have been increasing year by year. The improvement has been more obvious, and the passing grades have been decreasing year by year. The failing grades are the lowest in 2017 and the highest in 2016. The annual pass rate is very high, and basically stable at a level, slightly decreased in 2016; in the boys and girls group, the boys of the best grade are slightly higher than the girls, and the girls in the good and passing grades are higher than the boys, and the failing girls are better than the boys. Boys are weak and girls are more qualified than boys.

The above analysis of Table 3, Table 4, and Figure 2 shows that students's performance is generally improved year by year, and that in 2017 is the best. By the boys' and girls' achievements, girls have better overall results than boys. Why do girls get better grades than boys for three years in a row? As for this question, through interviews with students before the exam, they learned that girls are more positive about the test results than boys, hoping to improve the test results by practicing before the exam. Game behavior is very targeted. (table 5)

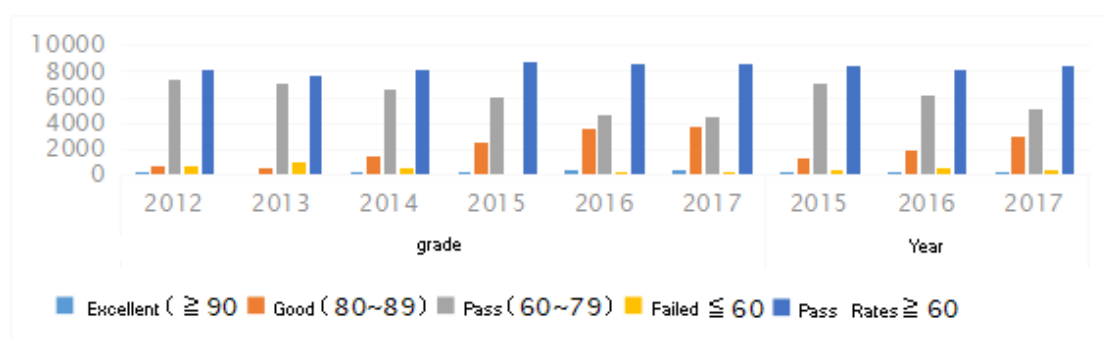
Table 5. Whether to exercise in advance to improve their own test results before each physical test

Gender	yes		no	
	number	%	number	%
Male	58	62.37	35	37.63
Female	195	74.71	66	25.29

Table 6 Grade Average Analysis of Grades in 2015, 2016, and 2017

		Excellent(90)	Good (80~89)	Passed (60~79)	Failed ≤ 60	pass rates ≥ 60
Grade	2012	28.00	698.00	7417.00	735.00	8140.00
	2013	20.00	625.00	7052.50	1014.50	7697.50
	2014	44.33	1396.67	6644.67	609.67	8085.67
	2015	126.67	2564.67	6024.67	166.67	8716.00
	2016	365.50	3540.00	4647.00	116.00	8552.50
	2017	359.00	3757.00	4493.00	101.00	8609.00

Note: Average analysis of the number of people entered at each level for three years



Note: Average analysis of the number of people entered at each level for three years

Figure 3. Average analysis of grades in 2015, 2016, and 2017

Table 6 and Figure 3 shows that with the decrease of grades, excellent and good grades gradually increase, and the grades of pass grades gradually decline. Fail grades are gradually decreased from 2014 to 2017, and the difference in percent of pass is not significant. The 2015-2017 level is relatively high. This shows that the scores of students in the lower grades are preferable to those in the higher grades. Basically, it forms a ladder pattern, such as the first grade is better than the second grade, and the third grade is better than fourth grade.

4. Conclusion

1) Students of South China Agricultural University have the best physical performance (lung capacity), physical flexibility (sitting forward) and best scores, followed by sprinting ability, but endurance items, explosive power of lower limbs (standing long jump), male upper limbs project (cited Body up) is relatively poor, especially boys' upper limbs (chinese pull-ups) appear weak. Students who "shock" before testing can only improve the performance of short-term exercise programs, and have no effectiveness on long-term training programs.

2) Under the new "Standard", the implementation of the school's physical test documents has greatly promoted the students' test scores, improved the excellent and good ratio, promoted the overall test scores of the girls, and made girls' sports behavior more explicit and conscious, but the boys needs to be strengthened.

3) Performance Standards in the New Standards Grades three and four are slightly higher than Grades One and Two, which intensify students' awareness of subjective exercise to a certain extent, but are affected by objective factors (no senior sports courses, professional courses are busy, or graduation is found There is no time for work, no physical activity is organized in the class, etc.,) or whether the performance of primary students is better than that of senior students.

4) The implementation of school-related test documents played a significant role in promoting the grades that meet the requirements of the policy, and the students' grades slightly improved. The non-politically required grade students did not increase their grades but decreased. The rationality and scientific nature of testing policy development directly guide students' trends and will make students more active.

5. Suggestions

1) Under the provisions of the new "Standards", the school shall formulate relevant test documents according to the students' conditions, standardize the school's physique management system, and strictly implement the requirements.

2) Intensify the investment in school sports venues, not only to install sports facilities that are easy to exercise in the sports field but also in the areas where students live, to regularly check the safety and use of sports equipment and facilities, and to enable students to exercise and want to exercise. Provide assurance.

3) Develop and improve the schools' physical measurement management system, optimize test information management, clarify the focal position of students, allow students to understand their own situation in time, and provide students with more humane and scientific exercise plans.

4) Standard tests of the operation process to ensure the fairness and accuracy of student achievement.

5) Make full use of the role of school test policy, actively guide girls' physical exercise, increase the intervention in boys' physical exercise behaviors, formulate relevant favorable measures to improve boys' upper body strength and guide students to take the initiative to exercise rather than engage in "surprise" or "coping" test".

6) For senior students, there are no physical education classes, lack of motivation factors, the establishment of basic quality training clubs, the mobilization of the functions of party college cadres and college class cadres, making full use of spare time to organize sports activities, and providing related physical education teachers according to the needs of students. Conduct guidance.

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