Journal of Advanced Academic Research and Studies 高等学术研究期刊
Vol. 3, No.6, 2026 (pp. 36-55)
http://www.nlbaeai.org/

ISSN 3006-4007 (Print)
ISSN 3006-4015 (Online)

FromFrom "Overall Pass" to "Targeted Strategies": A Data-Driven Reconstruction of College Physical Education through "Precision Intervention"— A Case Study of the 2024 Student Physical Fitness Test Results of a University

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Received 6 March 2026, Revised 2 May 2026, Accepted 27 June 2026

Abstract

Purpose – This paper presents a data-driven curriculum reform to better promote the all-round physical health of college students and shifts from a "pass-oriented" model to a "targeted strategy" model.

Design/Methodology/Approach – Using a university's 2024 fitness test data, this study will analyze nine core items (such as BMI, vital capacity, 50m sprint), examining pass rates, project weaknesses, grade differences, and gender distribution to identify main deficiencies and propose a precision-intervention curriculum plan.

Findings – The data show that the university is "qualified overall but with low excellence/good rates, prominent project weaknesses, and uneven grade development". Key problems include a body composition imbalance (19% overweight/obese, 9% underweight), severe upper-body weakness (52% of male participants failed the pull-up test), cardiorespiratory deficiency (27% of male participants failed the 1000m run, 22% of female participants failed the 800m run), and weak explosive power (16% of standing long jump failures, 3% excellence rate). Grade distribution is uneven, and juniors perform the worst (0.3% excellent, 6.8% failed, average score 70.79).

Research Implications – Five strategies have been put forward in this paper: stratified body composition intervention, project-specific strength training, spatial/temporal safeguards for grade balance, interest-driven exercise, and enhanced monitoring. Based on the above research, adjust the teaching plan and solve problems in student health; at the same time, develop a rational, individualized physical education system.

Keywords: Data-driven; College Physical Education; Precision Intervention; Curriculum Reconstruction
JEL Classifications: I23,I12,C81

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I. Introduction

In line with the spirit of the Opinions of the Ministry of Education and the Four Other Departments on Implementing the Plan to Strengthen Students' Physique and the Basic Standards for Physical Education in Higher Education Institutions, the Education Department of Shaanxi Province has issued the Three-Year Action Plan for Improving Students' Physical Health in Shaanxi Province. Therefore, the plan will stipulate that universities need to develop a "one school, one policy" special action plan for improving student health. Given the above, the university has published the "Implementation Plan for the 'One School, One Policy' Student Physical Fitness Testing Work" in 2026 and put forward plans to build a scientific and standardized physical fitness testing work system. Currently, most of the physical education curricula in schools use the "single standard, single teaching" approach. Although this can guarantee a high pass rate, it fails to address the deficiencies in individual weaknesses and has thus led to the current situation of "overall qualification but poor excellence and good rates, with prominent shortcomings in project-specific skills" (Li, M., & Zhang, H., 2025). Therefore, this paper takes the 2024 student physical fitness test data from a university as its research subject. Based on the above analysis, a "targeted strategy" curriculum reconstruction plan will be implemented with data. The goal is to change the teaching model from a "pass-oriented" way of teaching to "precision intervention" (Sun, Q., & Zhou, L., 2025), and to provide a practical reference for the reform of college physical education.

II. The Data Foundation for Curriculum Reconstruction

The data of the physical fitness test in this paper meet the requirements listed in the National Student Physical Health Standard (2014 Edition) (hereinafter referred to as the "Standard"). The top of the standard will be used to assess the actual health levels and physical fitness of the students. The subjects of this test were the students at a particular university in 2024, and the three dimensions of the test items were body morphology, function and quality.

1. Test Items and Weights

According to the requirements of the Standard, the test items and their corresponding weights for all university grades are as follows: Body Mass Index (BMI) accounts for 15%, Vital Capacity for 15%, the 50-meter Sprint for 20%, the Standing Long Jump for 10%, Sit and Reach for 10%, Pull-ups (male) / 1-minute Sit-ups (female) for 10%, and the 1000-meter Run (male) / 800-meter Run (female) for 20%.

Based on the analysis of the weight structure, endurance and speed items (the middle-long distance run and 50-metre sprint) together account for 40% of the total, and are therefore the main indicators of overall fitness. At the same time, strength-based items (pull-ups/sit-ups and the standing long jump) together make up 20%

and are basic requirements for upper and lower limb strength and explosive power. The weights assigned will indicate which part of the curriculum needs to be strengthened in light of the collected data, thus adjusting teaching content accordingly.

2. The Correlation between Scoring Standards and Curriculum Reconstruction

All individual event scores are based on the grade-specific scoring tables in the Standard. For example, male university students need to complete ≥ 17 repetitions (for freshmen and sophomores) or ≥ 18 repetitions (for juniors and seniors) of pull-ups to be considered "excellent", and the passing line is 10 repetitions. The passing time for the 800m run of female students in the freshmen and sophomore classes was no more than 4'34", and for juniors and seniors, it was no more than 4'32". The four levels of the overall score rating are: Excellent (≥ 90.0 points), Good ($80.0-89.9$ points), Pass ($60.0-79.9$ points), and Fail (≤ 59.9 points).

The above scoring norms and weightings serve as the basis for determining the students' physical weaknesses and revising the curriculum. These seemingly concrete indicators and passing grades are, in fact, a reflection of the current "results-oriented, process-neglecting" mode of the curriculum: students only need to achieve the standard without specific attention to their weak links (Chen, X. F. and Zhao J., 2024. This is precisely the logical beginning of the transition in this paper from "general qualifications" to "specific strategies"; only by accurately identifying the shortcomings in the project through data can we provide a practical foundation and direction for the following "precision intervention" curriculum reconstruction.

3. Shortcomings of the Existing Curriculum System

The present curriculum mainly follows the model of "unified standards and unified teaching". Although it has achieved a high all-round passing rate, it is not very precise in addressing and improving students' weak spots. For instance, pull-ups are only assessed by the "number of repetitions", and there is no specific curriculum for "progressive strength training". Similarly, middle- and long-distance running exercises are often done without purpose, and no personalised training plans are based on heart rate monitoring or pace control. The "results-oriented, process-neglecting" structure of this curriculum cannot address the deficiencies in learning identified by the data, such as the lack of upper-body strength in male students and poor endurance among female students. Thus, it can be seen that there is a pressing need to move towards a "targeted strategies" curriculum reform based on "data-driven" approaches.

II. Research Methods

Based on the 2024 student physical fitness test data at a university, this paper will study the current situation of students' physical health systematically. Based on the above data, while the overall pass rate for students is

90 per cent, many are not performing to a high standard and failing to achieve excellent results. A 52% failure rate for male pull-ups is a typical case; there are also obvious deficiencies in the standing long jump and middle/long-distance running events, and uneven grades of development. Therefore, this paper proposes building a "data-driven and precise" curriculum reconstruction plan to change from a "pass-oriented" approach to one of "precision intervention", thus providing a practical path for the reform of college physical education.

III. Analysis of Physical Fitness Test Data and Results

1. Overall Pass Rate of the University's Physical Fitness Test

A comprehensive scan of the physical fitness test data for students at a university in 2024 was carried out to identify the "pathologies" in students' physical health under the current physical education curriculum system more accurately, thereby providing data support and a logical starting point for subsequent curriculum reconstruction. As Based on the above data, the general pass rate of the students' physical fitness tests at the university is over 90% and relatively high. However, the excellent rate is only 0.4% (62 students), and the good rate is only 9.6% (1,648 students); more than 85% of the students' scores are in the passing range. It shows that the current state is "qualified overall but lacking in excellence and good performance"; this "flattened" performance structure reflects a deficiency in an effective mechanism for "precision intervention" in the current physical education curriculum to help students advance to a higher level of physical fitness. The design of the curriculum and training models have failed to motivate students to learn more effectively, as shown in the Figure 1 below.

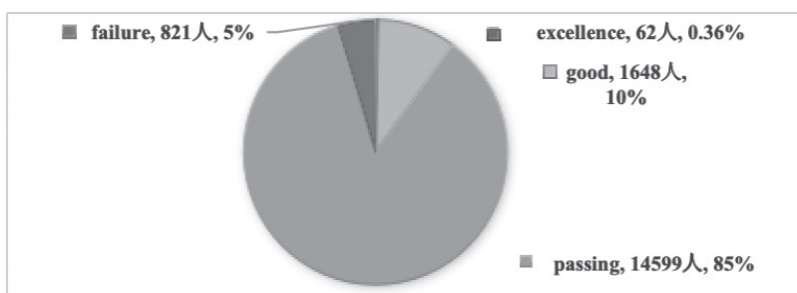

Figure 1. Distribution Chart of Overall Physical Fitness Test Data for the School
Source: Compiled by the author based on university physical fitness test data

2. Proportion of Failing Students by Gender, as Detailed in the Table Below

A total of 821 students were found to have failed or been unable to pass the comprehensive grades at

the university. Among this group, there were 408 men and 413 women; thus, both sexes accounted for an equal proportion of the total failures, at 50% each. Given that the two genders have different strengths and weaknesses, suitable countermeasures can be devised for each gender based on this analysis, rather than employing a single policy for all students.

Table 1. Proportion of Male and Female Students Failing the Test

Gender	Excellence Rate	Good Rate	Pass Rate	Failure Rate
Male	0%	3%	25%	2%
Female	0%	6%	61%	2%

Source: Compiled by the author based on university physical fitness test data

Since the total number of male and female students in the university was not the same, the proportion of female students who passed the test was relatively higher than that for male students.

Table 2. Comparison of unqualified rates across individual test items

Grade	BMI	Vital Capacity	50m Sprint	Standing Long Jump	Sit and Reach	800m	Vital Capacity	50m Sprint	Standing Long Jump
First Year	182	209	225	628	210	487	222	58	332
Second Year	224	218	229	668	155	640	301	26	376
Third Year	339	437	351	879	225	855	461	51	1814
Fourth Year	239	317	246	489	91	613	330	37	2696
Total Failures	984	1181	1051	2664	681	2595	1314	172	5218
Failure Rate	6%	7%	6%	16%	4%	15%	8%	1%	30%

Source: Compiled by the author based on university physical fitness test data

Based on the analysis of the failure rates for the individual test items, three serious deficiencies have been found and must be corrected urgently. Statistics of failing items show that the Standing Long Jump, the 800-metre run for female students, and the Pull-ups for male students have a high number of failures and account for a relatively large proportion.

The data in Table 2 show that:

Significant Deficiencies in Upper Body and Core Strength: The failure rate for male pull-ups is as high as 52%, and this is directly due to the inadequacy of the strength training module in the current physical education curriculum.

Obvious Deficiencies in Explosive Power and Body Coordination: The failure rate of the standing long jump is 16%, and the excellence rate is only 3%. This shows that there are deficiencies in the content or teaching methods of the course for jumping, speed and coordination training.

Urgent Need to Improve Cardiorespiratory Endurance and Willpower: The failure rates for middle- and long-distance running by both male and female students remain high. Therefore, it can be concluded that the density, strength or appeal of endurance exercises in the curriculum needs to be enhanced because they have not effectively improved students' cardiorespiratory function and exercise persistence.

3. Failure Rates by Test Item, as Shown in the Table Below

According to the statistics of failing items, the four physical fitness test items that have a high number of failures and account for a considerable proportion are BMI, Standing Long Jump, the 800-meter run (female), and Pull-ups (male). as shown in the Figure 1 below:

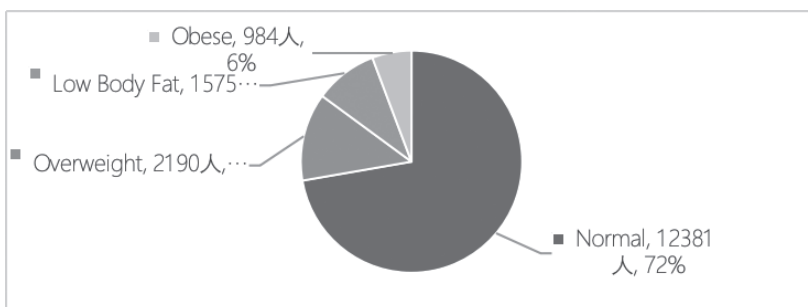

Figure 2. Test Data for Body Fat (BMI)

Source: Compiled by the author based on university physical fitness test data

Based on the data in the pie chart, there is a problem of unbalanced body composition among students: 72% of the students are of normal weight, but a combined 19% of the students are overweight (13%) and obese (6%), and underweight students account for 9%. Nearly one-third of the students have an abnormal body composition and thus require strengthening of dietary and exercise management through curriculum intervention.as shown in the Figure 2 above:

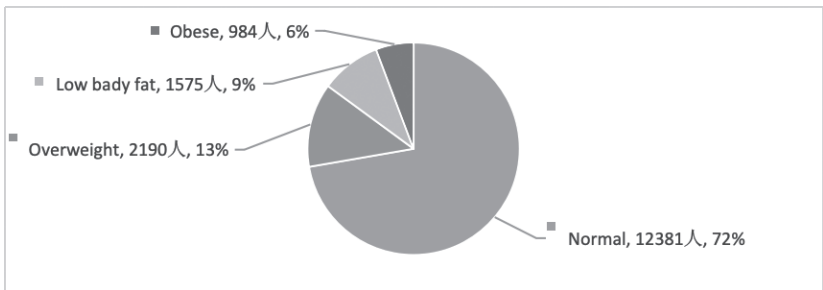

Figure 3. Test Data for Vital Capacity

Source: Compiled by the author based on university physical fitness test data

Based on the pie chart data, there is a problem of uneven body composition among students: 72 per cent of the students have a normal weight, but overweight (13 per cent) and obese (6 per cent) students combined account for 19 per cent, and underweight students account for 9 per cent. Almost a third of the students have abnormal body composition and require strengthening of dietary and exercise management in the curriculum.as shown in the Figure 3 above:

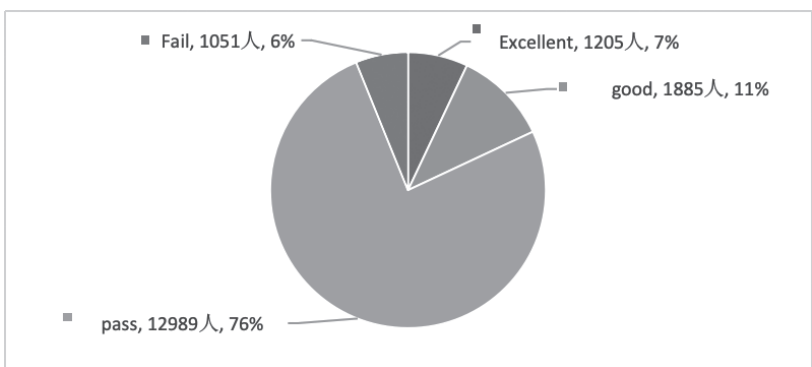

Figure 4. Test Data for the 50-meter Sprint

Source: Compiled by the author based on university physical fitness test data

As shown in the pie chart data, the general results of the 50-meter sprint were relatively good; a large number of students passed (12,989 students, making up 76%), and those who received a "good" grade (1,885 students, 11%) and an "excellent" grade (1,205 students, 7%) together accounted for 18%, while only 1,051 students (6%) failed. It can be seen that the foundation of speed-training education is relatively weak.as shown in the Figure 4 above:

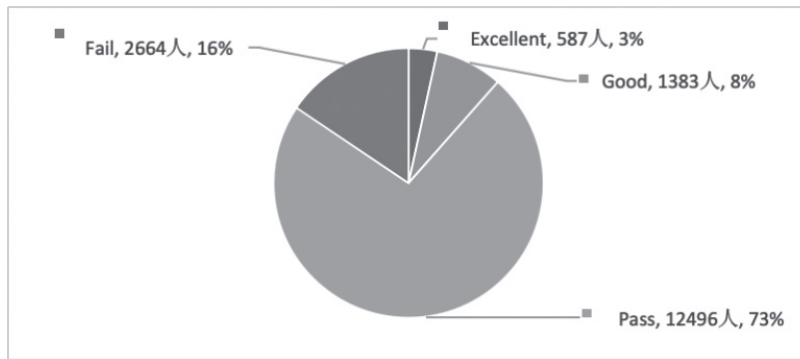

Figure 5. Test Data for the Standing Long Jump
Source: Compiled by the author based on university physical fitness test data

Based on the data in the pie chart, the distribution of results for the standing long jump shows a "concentrated in the passing range, with prominent weaknesses": 12,496 students passed (accounting for 73%), but the number of students who failed reached 2,664 (accounting for 16%), and the excellence rate was only 3% (587 students). Given that more than 70 per cent of the students' scores were in the passing range, it can be assumed that their training in explosive power and coordination was inadequate.as shown in the Figure 5 above:

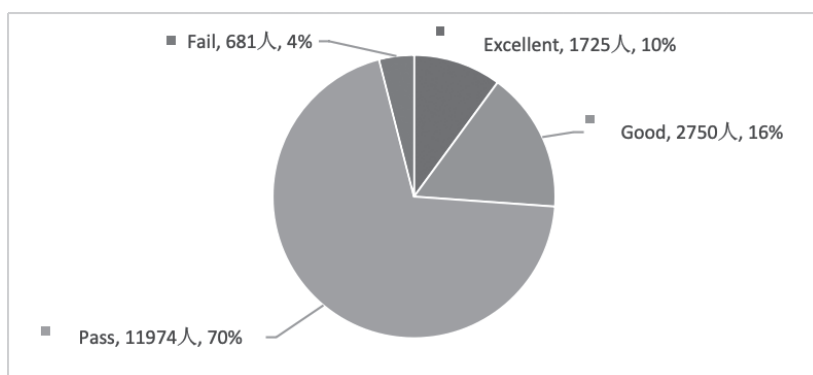

Figure 6. Test Data for the Sit and Reach
Source: Compiled by the author based on university physical fitness test data

Based on the pie chart data, the general performance in the sit-and-reach test was relatively good: 11,974 students passed (accounting for 70%), and among those who achieved a "good" rating (2,750 students, 16%) and an "excellent" rating (1,725 students, 10%), together they accounted for 26%, only 681 students (4%) failed. This shows that the students are relatively flexible, and thus the curriculum has achieved a certain extent of flexibility.as shown in the Figure 6 above:

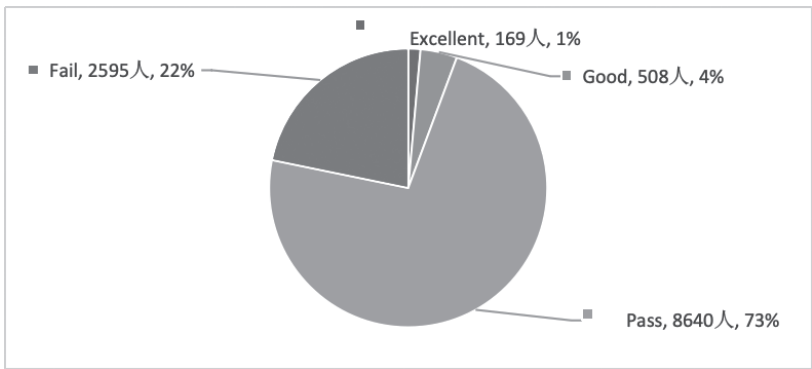

Figure 7. Test Data for the 800-meter Run

Source: Compiled by the author based on university physical fitness test data

Based on the data in the pie chart, the distribution of results for the female students' 800-meter run shows a "predominantly passing, with a scarcity of high scores" pattern: 8,640 students passed (73%), and the number of failures was 2,595 (22%). On the other hand, only 508 students were rated "good" (4%) and 169 were rated "excellent" (1%), for a total of just 5%. The above data show that the students' cardiorespiratory endurance and willpower are quite low. It is one of the "three major weaknesses" that need to be addressed urgently in the curriculum reform, and precise interventions will be made through ways such as increasing the intensity of endurance training and diversifying exercise forms.as shown in the Figure 7 above:

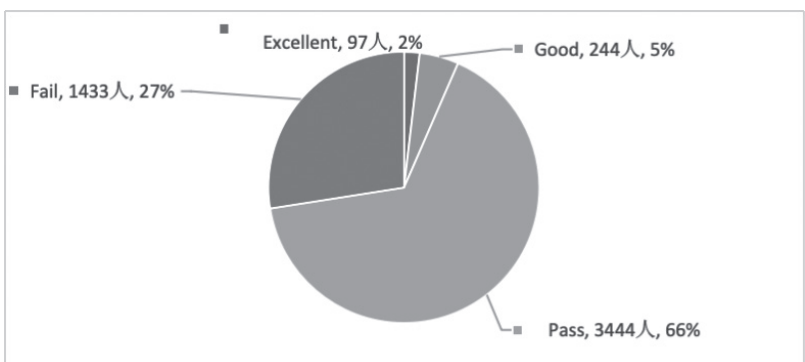

Figure 8. Test Data for the 1000-meter Run

Source: Compiled by the author based on university physical fitness test data

According to the chart, the results of the 1000m run for male students were significantly lower. Specifically, 3,444 participants were able to pass this test and accounted for 66% of the group; 1,433 individuals, or 27%, did not reach the minimum standard. Only 244 examinees were rated as "good" (5%), and only 97 received

an "excellent" score (2%); thus, fewer than 7% of all test-takers achieved the higher performance levels. With nearly one-third of the students falling into the failing category, it can be seen that there is a serious problem of low cardiorespiratory fitness among the male students. The above shortcomings are serious deficiencies that must be addressed urgently in the reform of the curriculum, and measures such as enhancing the depth and student participation in endurance training need to be taken.as shown in the Figure 8 above:

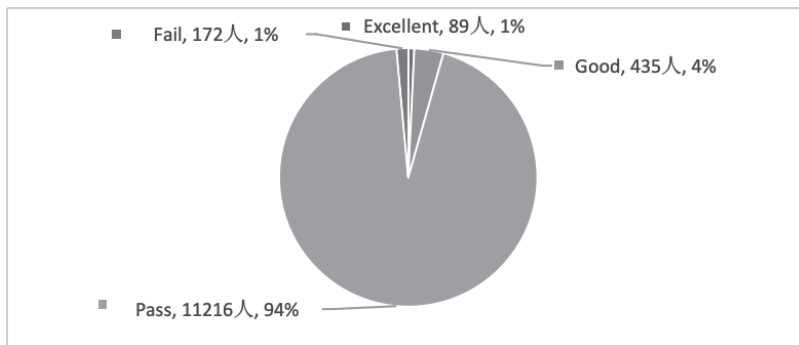

Figure 9. Test Data for the 1-minute Sit-ups

Source: Compiled by the author based on university physical fitness test data

According to the data in the statistical charts, the results of the sit-up tests for female students are distributed in a relatively narrow range, and most of the students have passed; a total of 11,042 have passed. Among the 11,953 female participants, the entire passing rate was 94%. However, the number of students who received a "Good" grade was only 435, making up about 4%, and the number of those with an "Excellent" grade was even lower at just 108, or about 1%. Although the overall passing rate of this item is relatively high, 172 students still failed and accounted for 1% of the total. The proportion of students with "Good" and "Excellent" ratings combined is less than 5%. It can be seen that the main strength level of most female students is still close to the passing mark and has not been significantly improved. The present training system does not have a progressive guidance path for strengthening the core muscles, so most students are unable to reach a higher level in terms of physical fitness. Therefore, there is a significant shortcoming in the curriculum's construction: it does not help students move from "meeting the basic requirements" to "achieving higher-order thinking abilities".as shown in the Figure 9 above:

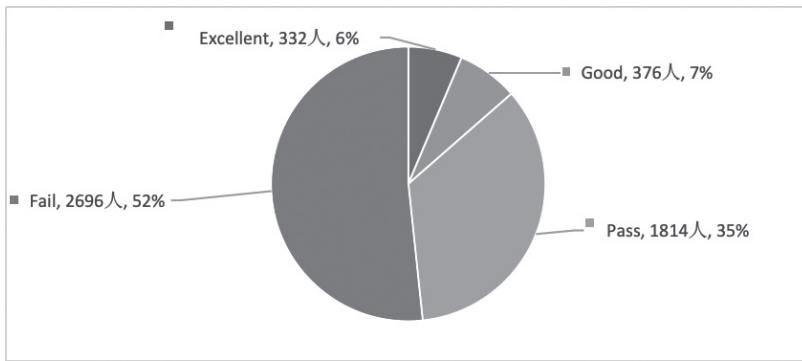

Figure 10. Test Data for Pull-ups

Source: Compiled by the author based on university physical fitness test data

According to the data in the pie chart, the distribution of results for the male students' pull-ups is very serious; there is "polarisation and a large number of failures", with the number of students who failed reaching 2,696 and accounting for a considerable 52%, indicating that more than half of the students did not meet the required standard. Only 1,814 students passed (35%), and the number of students who achieved a "good" rating (376) and an "excellent" rating (332) combined was only 13% (about 414 students). This data shows that male students have a significant lack of upper body and core strength, and this is a fundamental problem that must be addressed in the revision of the curriculum urgently. Progressive strength training is one type of specific reinforcement for special groups.as shown in the Figure 10 above:

IV. Overall Situation by Grade Level

Table 3. Analysis of the First-Year (Freshman) Cohort

Gender	Number	Excellent	Good	Pass	Fail	Excellence Rate	Good Rate	Pass Rate	Failure Rate
Male	1181	13	162	931	75	0%	4%	22%	2%
Female	2964	3	294	2582	85	0%	7%	62%	2%
Total	4145	16	456	3513	160	0%	11%	85%	4%

Source: Compiled by the author based on university physical fitness test data

A total of 16 first-year students achieved an “excellent” rating, 456 achieved a “good” rating, 3,513 passed, and 160 failed. The good rate was 11%, the pass rate was 85%, and the failure rate was 4%.as shown in the Table 3 above.

Table 4. Analysis of the Second-Year (Sophomore) Cohort

Gender	Number	Excellent	Good	Pass	Fail	Excellence Rate	Good Rate	Pass Rate	Failure Rate
Male	1197	17	160	947	73	0%	4%	23%	2%
Female	2908	4	258	2567	79	0%	6%	63%	2%
Total	4105	21	418	3514	152	1%	10%	86%	4%

Source: Compiled by the author based on university physical fitness test data

A total of 21 second-year students achieved an “excellent” rating, 418 achieved a “good” rating, 3,514 passed, and 152 failed. The excellence rate was 1%, the good rate was 10%, the pass rate was 86%, and the failure rate was 4%.as shown in the Table 4 above.

Table 5. Analysis of the Third-Year (Junior) Cohort

Gender	Number	Excellent	Good	Pass	Fail	Excellence Rate	Good Rate	Pass Rate	Failure Rate
Male	1715	15	165	1352	187	0%	3%	26%	4%
Female	3453	3	295	2989	166	0%	6%	58%	3%
Total	5168	18	460	4341	349	0%	9%	84%	7%

Source: Compiled by the author based on university physical fitness test data

A total of 18 third-year students achieved an “excellent” rating, 460 achieved a “good” rating, 4,341 passed, and 349 failed. The good rate was 9%, the pass rate was 84%, and the failure rate was 7%.as shown in the Table 5 above.

Table 6. Analysis of the Fourth-Year (Senior) Cohort

Gender	Number	Excellent	Good	Pass	Fail	Excellence Rate	Good Rate	Pass Rate	Failure Rate
Male	1125	3	77	968	77	0%	2%	26%	2%
Female	2587	4	237	2263	83	0%	6%	61%	2%
Total	3712	7	314	3231	160	0%	9%	87%	4%

Source: Compiled by the author based on university physical fitness test data

A total of 7 fourth-year students achieved an “excellent” rating, 314 achieved a “good” rating, 3,231 passed, and 160 failed. The good rate was 9%, the pass rate was 87%, and the failure rate was 4%.as shown in the Table 6 above.

IV. Longitudinal Comparative Analysis of Cross-Grade Data at a University

Table 7. Cross-Grade Data Comparison

Grade	Excellence Rate	Good Rate	Pass Rate	Failure Rate	Average Score
First Year	0%	11%	85%	4%	72.18
Second Year	1%	10%	86%	4%	72.04
Third Year	0%	9%	84%	7%	70.79
Fourth year	0%	9%	87%	4%	71.22

Source: Compiled by the author based on university physical fitness test data

The average physical fitness test scores for each grade level were as follows:
First Year > Second Year > Fourth Year > Third Year

Table 7-1. Distribution of the Proportion of First-Year Students Participating in Test Items

Test Item	Excellence Rate	Good Rate	Pass Rate	Failure Rate
BMI	72%	9%	19%	0%
Vital Capacity	14%	16%	65%	6%
50m Sprint	6%	10%	78%	6%
Standing Long Jump	3%	8%	75%	14%
Sit and Reach	11%	15%	69%	5%
800m Run (Female)	1%	4%	73%	22%
1000m Run (Male)	2%	4%	68%	26%
Sit-ups (Female)	1%	4%	93%	2%
Pull-ups (Male)	7%	7%	33%	53%

Source: Compiled by the author based on university physical fitness test data

Table 8. Number of First-Year Students Participating in Each Test Item

Test Item	Excellent	Good	Pass	Fail
BMI	402	957	3006	182
Vital Capacity	494	615	1423	209
Standing Long Jump	361	423	1336	817
Sit and Reach	678	498	1773	209
Pull-ups (Male)	799	155	2754	2776
50m Sprint	591	409	3188	425
1000m Run (Male)	344	246	1121	1433
800m Run (Female)	—	274	2596	613

Source: Compiled by the author based on university physical fitness test data

The total passing rate for first-year students was 96%. According to the analysis of the test items, this group

of students needs to enhance the training for male students in the 1000-meter run and pull-ups to improve their all-around physical fitness. Simultaneously, the endurace-training requirements for female students have been rising.as shown in Table 7 and Table 8 above.

Table 9. Distribution of the Proportion of Sophomore Students Participating in Test Items

Test Item	Excellence Rate (%)	Good Rate (%)	Pass Rate (%)	Failure Rate (%)
BMI	0%	73%	21%	6%
50m Sprint	6%	12%	67%	15%
Standing Long Jump	3%	8%	75%	14%
Sit and Reach	11%	14%	67%	8%
800m Run (Female)	1%	4%	73%	22%
1000m Run (Male)	2%	4%	67%	27%
Sit-ups (Female)	1%	3%	95%	1%
Pull-ups (Male)	9%	14%	38%	39%

Source: Compiled by the author based on university physical fitness test data

Table 10. Number of Sophomore Students Participating in Each Test Item

Test Item	Excellent	Good	Pass	Fail
BMI	224	3001	880	—
Vital Capacity	218	673	2736	309
50m Sprint	478	309	3089	229
Standing Long Jump	—	—	—	640
Sit and Reach	284	433	3028	125
1000m Run (Male)	—	—	—	4065
800m Run (Female)	—	—	—	3064
Sit-ups (Female)	—	—	—	2102

Source: Compiled by the author based on university physical fitness test data

The total passing rate for second-year students was 96%. According to the analysis of the test items, this cohort needs to enhance the training of male students in the 1000-metre run and pull-ups to improve their all-around physical fitness. Simultaneously, endurance exercise needs to be introduced for the female students.as shown in Table 9 and Table 10 above.

Table 11. Distribution of the Proportion of Junior Students Participating in Test Items

Test Item	Excellence Rate	Good Rate	Pass Rate	Failure Rate
BMI	0%	9%	73%	18%
Vital Capacity	7%	17%	65%	11%
Standing Long Jump	3%	8%	75%	14%
Sit and Reach	11%	18%	65%	6%
Pull-ups (Male)	7%	7%	29%	57%
50m Sprint	6%	10%	78%	6%
1000m Run (Male)	2%	4%	67%	27%
800m Run (Female)	1%	4%	73%	22%

Source: Compiled by the author based on university physical fitness test data

Table 12. Number of Junior Students Participating in Each Test Item

Test Item	Excellent	Good	Pass	Fail
BMI	339	3,703	1,126	85
Vital Capacity	437	832	3,417	367
50m Sprint	351	558	3,922	573
Standing Long Jump	136	500	3,671	640
Sit and Reach	604	832	3,057	329
1000m Run (Male)	97	246	1,121	1,433
Pull-ups (Male)	343	352	1,726	2,772
1000m Run (Male)	97	246	1,121	1,433

Source: Compiled by the author based on university physical fitness test data

The total passing rate of third-year students was 93 per cent. Based on the analysis of the test items, it can be seen that the male students in this cohort need to strengthen their training in the 1000-meter run and pull-ups to improve their all-around physical fitness. At the same time, endurance training for female students will also be organised.as shown in Table 11 and Table 12 above:

Table 13. Distribution of the Proportion of Senior Students Participating in Test Items

Test Item	Excellence Rate	Good Rate	Pass Rate	Failure Rate
BMI	0%	9%	73%	18%
Vital Capacity	7%	17%	65%	11%
Standing Long Jump	3%	8%	75%	14%
Sit and Reach	11%	18%	65%	6%
Pull-ups (Male)	7%	7%	29%	57%
50m Sprint	6%	10%	78%	6%
1000m Run (Male)	2%	4%	67%	27%
800m Run (Female)	1%	4%	73%	22%

Source: Compiled by the author based on university physical fitness test data

Table 14. Number of Senior Students Participating in Each Test Item

Test Item	Excellent	Good	Pass	Fail
BMI	802	239	200	166
Vital Capacity	439	317	280	166
Standing Long Jump	17	2777	2617	2617
Sit and Reach	2618	327	90	423
Pull-ups (Male)	49	366	243	668
50m Sprint	1828	113	33	613
1000m Run (Male)	107	243	37	364
800m Run (Female)	274	372	37	613

Source: Compiled by the author based on university physical fitness test data

The total number of fourth-year students who passed was 96%. According to the examination of the test results, this group should increase their training in middle- and long-distance running, including both male and female athletes, to improve their all-around physical fitness.as shown in Table 13 and Table 14 above:

At the level of each grade, the average scores for the physical fitness test showed an inverted "U" shape (First Year 72.18 > Second Year 72.04 > Fourth Year 71.22 > Third Year 70.79). Third-year students performed the worst and had a failure rate of 7%. It is closely related to the increase in academic pressure that students experience at the start of specialized courses, and as a result, their time for independent exercise has significantly decreased. It is also evident that the curriculum system lacks flexibility and adaptability in the organisation of "upper-grade physical education courses". There is no effective curricular transition or support for students moving from "passive participation" in their freshman year to "self-directed management" in their upper years, and thus exercise habits are unlikely to be maintained.as shown in the Table 7 above:

V. Overall Analysis and Curriculum Reconstruction

The physical fitness test data for the university's 2024 cohort shows the main features of students' physical health: "qualified overall, but with a low excellence rate and good rates; prominent weaknesses in projects and uneven grade development". The overall pass rate of 90% was higher than that of other universities in the province, and the pass rate for female students was significantly higher than that for male students. It can be seen that the foundation of the university's physical education courses is solid; however, there are still many deficiencies. The problem of unbalanced body composition is also relatively serious; together, the number of overweight and obese students (3,174) and underweight students (1,575) is about 28.8% of the total population. This shows that students have an unreasonable diet and insufficient exercise time at present. The core deficiencies are muscle strength and cardiorespiratory endurance; for example, 52 per cent of the male pull-up group and 27 per cent of the male 1000-metre run group failed to complete the task, and 22 per cent of the female 800-metre run group failed to complete the task. Therefore, the child is not exercising regularly and lacks strength. The explosive power module has shown poor results, with a 16% failure rate in the standing long jump and only a 3% excellence rate; therefore, strengthening the strength and coordination of the students is urgently required. Grade-level development is uneven; third-year students performed the worst with an excellence rate of 0.3%, a failure rate of 6.8% and an average score of 70.79, which may be due to reduced exercise time under higher pressure from professional course requirements.

Based on the above data, it can be seen that the current physical education curriculum is geared towards "meeting test standards" and thus lacks the conditions for promoting all-around development of students. Therefore, the teaching ideas need to be altered; that is to say, the traditional comprehensive teaching method aiming to raise the overall pass rate should be reformed into targeted-strategy instruction.

The main contents of the curriculum renovation are as follows:

Problem-Oriented: Based on the weaknesses in physical condition identified by data from the "physical

examination report", precisely determine the deficiencies in strength, endurance and explosive power that need to be addressed in the curriculum.

Stratified Intervention: Design differentiated curriculum modules and training plans for students with different levels of physical fitness (obese, underweight), different weaknesses in projects, and different grades.

Data-Driven: Establish a closed-loop system of "testing - analysis - intervention - retesting" to enable data to guide changes in the curriculum and personalised teaching.

Interest Empowerment: By adding new sports, organising challenge competitions and other ways in "hard training" and "smart training", increase the intrinsic motivation for self-directed exercise among students.

VI. Recommendations

Based on the analysis of data and the main ideas of curriculum reconstruction, the following strategies have been proposed:

1. Restructure the Curriculum: Establish a Three-Tier System of “Core Compulsory + Modular Elective + Extracurricular Expansion”

Core Compulsory Module (Targeted Assault): Add weakness items for physical fitness tests, such as pull-ups (for men), standing long jump, and middle/long-distance running, to the compulsory core content of first and second-year physical education courses. Use "progressive training methods" (e.g., incremental pull-ups, variable-speed running) for special reinforcement and ensure that the proportion of class time for these items is no less than 30%.

Modular Elective Module (Stratified Intervention): Offer elective courses based on the needs of different students, such as a "Strength Building Camp" (for students with strength deficiencies), an "Aerobic Fat-Burning Class" (for overweight or obese students), and a "Flexibility Yoga Course" (for underweight students). Thus, specific interventions can be implemented according to a "one-cohort, one-strategy" model.

Extracurricular Expansion Module (Interest-Driven): Form sports interest clubs and introduce new sports such as ultimate frisbee and pickleball. Organise "Campus Joy Run" check-in events and regularly hold "Physical Fitness Challenge Competitions" to motivate students through competition. Add competition results to the curriculum's evaluation system and increase the interest in exercising and competition.

2. Innovate Teaching Methods: Transition from “Uniform Teaching” to “Personalized Prescriptions”

Data Profiling and Dynamic Grouping: Use the results of physical fitness assessments to build a "Digital Profile of Physical Health" for all users.

Learner can know what they are good at and where they need to improve. The three groups of students in class are dynamically divided according to their traits: the "Advancement Cohort", the "Intensification Cohort", and the "Challenge Cohort", and then different classes are taught.

Mission-Oriented and Tiered Advancement: For difficult exercises, such as pull-ups, create a "Four-Stage Challenge System". After completing each stage, provide corresponding rewards and advance the learner in their course to make the improvement more visible and motivating.

Hybrid Instruction and Classroom Expansion: Develop an online "Fitness Booster" application to provide short exercise videos and personalised exercise plans. Students can follow the set-up routines independently after class and record their participation. Teachers can observe the changes in the data provided by the platform and offer feedback; thus, the training organised at school and off-campus will be in line with each other.

3. Optimize Curriculum Evaluation: Shift from “Outcome-Oriented” to “Valuing Process and Value-Added”

Process Evaluation: Include student participation in "leveled challenge tasks", extracurricular exercise check-ins and club activities in the curriculum's process-based evaluation, and increase its weight to 40%.

Value-added evaluation: Focus on the "degree of improvement" in students' physical fitness test data and establish individual honours, such as a "Most Improved Award". For students who performed poorly at first but have shown significant progress, give higher weight to their value-added assessment to motivate the participation of those who are lagging behind.

Based on the curriculum reconstruction above, we hope to create a new physical education ecosystem that is "data-driven, precisely targeted, progressively layered, and integrated across in-class and out-of-class activities". This will help improve the physical health of students and, more importantly, foster their habits and abilities for lifelong exercise, thereby achieving the educational goal of "Health First".

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