Reform Effectiveness of PE Teaching Model from the Perspective of Innovative Talents Cultivation in Universities: a Example of W University

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Abstract: The PE teaching mode of “whole integration of curricular and extracurricular learning” in universities is adapted to the practical needs of innovative talent cultivation, follows the concept of great health, “takes the development of students as the center”, gives full play to the role of teachers and students as the main body, and embodies the characteristics of the complete combination of in-class teaching, extracurricular learning and extracurricular sports activities. By the methods of documentary, questionnaire, expert interview method, experimental method and mathematical statistics and analysis and other research methods, based on the physical health of students to track and analyze test data and the reform of physical education and the curriculum of college sports questionnaire results comprehensive analysis, the results show that the implementation of college sports “full order class inside and outside integration” teaching model to improve the physical health level of university

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students have positive and positive role in promoting, the student to the curriculum teaching and university teaching reform results overall acceptance, for our country university sports teaching reform and development to provide valuable reference.

**Keywords:** PE teaching mode in universities; Innovative talents; Whole integration of curricular and extracurricular learning; Physical health; University students

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### 1. Background

In order to meet the new requirement of China’s economic and social development trend, the Ministry of Education introduced a “Experimental Zones of Talent Training Mode Innovation from the Reform Project of Higher School Teaching Quality and Teaching “ and a series of major initiatives, undergraduate education and teaching reform as the core elements to. promote the talent training model innovation in higher school . The reform of Physical Education (Abbreviations: PE) teaching in university will be deepened continuously, and the important value and realization path of Physical Education in talent training from the perspective of undergraduate education will be discussed centering on the new ideas as “First-class Teacher training, First-class Construction of Curriculum and First-class Teaching”. Talent training is the first priority for undergraduate education. PE teaching in universities must deepen the reform, realize connotative development, to foster talent service as the fundamental goal, innovating teaching mode, create a good environment for running a school, comprehensively promote the reform of PE curriculum and teaching reform to improve the innovative ability of students and the talent training quality in a new era . [1]. At the same time, the construction of “healthy China” is lead big health concept that require PE teaching service physical health level of the vast number of students . Based on the requirement of regional economic and social development trend, the development goal of higher education , closely the development of modern PE teaching and reform trend, the PE teaching mode of “whole integration of curricular and extracurricular learning “ in universities is adapts to the practical needs of innovative talent cultivation, follows the concept of great health, “takes the development of students as the center”. after a long period of college sports teaching reform practice gradually build , focus on the teaching curriculum, the organization forms, teaching contents, practice teaching, general education, teaching evaluation, and the specific aspects of system reform and the practice.
2. Methods

(1) Literature Method
We sort out the collected data refer to the relevant documents and academic papers on the reform of PE teaching and higher education issued at home and abroad.

(2) Questionnaire Survey
A questionnaire was designed to investigate the teaching reform of physical education and the implementation effect of “full-step extracurricular integration” in university. In the form of divided grades and concentrated periods, 3000 university’ students of different majors and grades were randomly selected from W University. Among them, 1000 questionnaires were distributed of grade 2014 and 2015, a total of 2000. Grade 2014 received 1000 questionnaires with a recovery rate of 100% and an effective rate of 100%, Grade 2015 received 949 questionnaires with a recovery rate of 94.9% and an effective rate of 100%. The validity and reliability of the questionnaire were tested both meeting the requirements of this study, with Rxy=0.95 and P<0.01.

(3) Experimental Method
Since 2013, W University has started the overall teaching reform in accordance with the new training objectives and the training mode of talents with large categories and major diversion. It has implemented the PE teaching mode of “whole integration of curricular and extracurricular learning” for 4,502 students from grade 2013, 4,803 students from grade 2014, and tested the effectiveness of the teaching mode with the students from the class of 2012 as the control group.

3. Results and Analysis

(1) Construction of the physical education teaching mode of “whole integration of curricular and extracurricular learning” in universities

1) Connotation of the PE teaching mode of “whole integration of curricular and extracurricular learning” in universities
The “integration of curricular and extracurricular learning” PE teaching mode has been implemented in colleges and universities for many years. It adopts the form of “taking classroom teaching as the center and taking extracurricular physical exercise and after-class physical training as the development and extension” to achieve the overall reform goal of strengthening students’ physique and cultivating students’ lifelong physical interest, habit and ability [2]. The PE teaching mode is an extension and improvement of the original mode. The model according to the teaching of university of W construction of high level research orientation and the goal of “Two Type” talent training mode innovation, always follow the education concept of “centered on students’ development” as the instruction, emphasizes the integrity of the PE teaching, systematic, scientific design of sports will select courses and sports quality general course, physical education teaching and the extracurricular sports...
study, sports extracurricular activity completely throughout the university stage. The interactive PE teaching mode advocacy by students as the main body who have the depth experience of active participation in teaching process, is dominated universities all over the country which adapts to the needs of innovative talents training.

2) The Theoretical Model

The goal of PE teaching mode of “whole integration of curricular and extracurricular learning “ in universities” is implemented the complete credit system, is divided into two broad categories of curriculum as compulsory courses and sports humanistic quality which set two classes, the total number of credits each period, each semester hours, the number of credits, required tasks of PE course learning in four years each student must be completed as graduate standard, the college students are allowed to graduate. The compulsory PE courses are divided into normal classes and extracurricular sports classes in two parts each students shall be completed in 6 semester of the first three years undergraduate, and evaluated the achievement of each physical education classes and extracurricular sports learning inside and outside class hours per semester, and a comprehensive achievement of PE curriculum eligible to obtain the corresponding credit if failed the student need to relearn in the next semester to obtain credit, but repairing failed should attend final exam at time of graduation. The elective PE course is a general course of physical education humanistic quality, which is offered in six semesters from sophomore year to senior year that every student must complete at least one semester and one or more courses during this period and pass the examination, so as to obtain the corresponding credits and meet the graduation requirements. According to the 2013 talent training program and the university PE syllabus, the basic goals and development goals of the university physical education curriculum are set. The basic goals are divided into six aspects: basic physical fitness, sports participation, sports skills, physical health, physical and mental health and social adaptation etc. Those objectives with strong adaptability and operability are divided into different levels to reflecting individual differences and pertinence.

3) The Teaching Content and Organizational Form of the course

There are 184 classes of compulsory PE courses are divided into in-class and after-class hours consist of 104 in-class hours and 60 after-class hours are completed respectively in six semesters. During the in-class period, physical fitness exercises, special sports skills and tactics, and related sports knowledge learning are the main contents. “Three autonomy” (independent choice of class time, items and teachers) is realized, and practical teaching is organized in the form of normal physical education. For students with partial physical disabilities or diseases are required to apply for separate classes every semester because cannot participate in normal physical education courses. The content of offline practice courses should be include of special sports techniques, basic sports methods and appropriate physical exercise activities. Through the network of “Excellent College” teaching platform, students can learning and testing sports theory independently, as realize the combination of online and offline, fully reflect the autonomy of sports learning, and better play the students’
subjective initiative to participate in the teaching process. School in extracurricular sports club activities, physical fitness test, morning exercises, after-school sports training and competition and specific project independently exercise (mobile network terminal equipment), and other forms to carry out, according to each student sports club activities, morning exercises and the number of online learning and specific projects independently exercise and total length calculation of the final grades of extracurricular school. Some students with sports specialty by taking the exercise training of different projects and on behalf of the school to participate in the different levels of games each semester, according to attendance and performance of training feedback from coaches to calculate the extracurricular grades. The physical health test is also included in the PE curriculum assessment which carried out regularly every year and every student is required to take part in it. Compulsory PE courses are carried out in the form of in-class and extra-curricular classes, forming by teacher-led, student-dominated, diversified and colorful teaching scenes with diverse organizational forms and rich contents, which truly combine curricular and extracurricular learning, online and offline, laying a solid foundation for achieving teaching goals.

Quality courses is general class curriculum system as a useful supplement form of compulsory PE course, by setting up a lot of sports special tactics, physical culture and sports appreciation of general education courses can be improve college students’ humanity quality and the comprehensive quality. The purpose of this course through in the process of undergraduate education and graduate education is to effectively expand PE teaching time and space, and meet different levels and different interests of all student’s learning needs.

4) The Evaluation of PE teaching

The compulsory PE courses and elective PE courses should be evaluated separately. The compulsory physical education courses should take part of the total score meanwhile should be integrated with the extracurricular PE classes each semester. The in-class time evaluation is based on the combination of the peacetime learning and the technical assessment of physical fitness at the end of the semester, and the extracurricular time evaluation of sports is based on the participation in sports club activities, morning exercises, extracurricular sports training and competition extracurricular sports activities, online sports course learning and offline independent exercise. The evaluation system for ecological evaluation concept as a guide, pay attention to students’ participation, heavy process, make the physical education curriculum evaluation more comprehensive and scientific and reasonable. At the same time, college student academic assessment should be consist of the PE courses and physical fitness test evaluation as the basic evaluation criteria for academic performance, performance evaluation and graduation. Therefore, in order to improve the physical health of backward student should be implement the combination with the evaluation of sports performance and students’ physique health test results, inside and outside P.E. classes targeted to carry out “the poverty alleviation plan on students’ physical health precision”, can be guide students to science, effectively strengthen
personal exercise.

(2) The Characteristics of the PE teaching mode of “whole integration of curricular and extracurricular learning” in universities

This teaching mode as the physical education teaching mode of “whole integration of curricular and extracurricular learning” in universities, has a long cycle, full coverage of learning stages, distinctive features, strong adaptability, and remarkable effect. Its characteristics are reflected in the following aspects: (1) goals of clear hierarchy is strong operability, divided into basic goals and development goals, reflecting differences and pertinence; (2) The curriculum system is comprehensive and systematic. The PE curriculum is composed of compulsory courses and quality elective general courses. The internal class hours of physical education are combined with the extracurricular PE class hours. (3) the forms of curriculum organization are rich in content that include sport-specific, physical exercise and sports culture and the related knowledge, offline teaching practice and online theoretical study, the combination of extracurricular sports activities under the guidance of teachers, the form of sports club by dominant by university students, as well as combined with collective and independent activities. (4) The teaching process has a long cycle and a wide coverage. The three-year compulsory course for undergraduates and the second-year undergraduate course or above are connected with the elective course for graduate students. The credits in and out of class are calculated equally separately. (5) The evaluation system of Teaching is science that combined with PE teaching, extracurricular physical activity and physical fitness test, and PE achievement and physical fitness test are the basic evaluation standards for college students’ academic evaluation, performance evaluation and graduation.

(3) Analysis on the effectiveness of the physical education teaching mode of “whole integration of curricular and extracurricular learning” in universities

1) Influence on Students’ Physical Health Level

The teaching reform in W university was started since 2012, grade 2013 students are acted the formal implementation of PE teaching mode of “whole integration of curricular and extracurricular learning” started in accordance with <the university sports teaching outline in 2013>. Meanwhile, those grades students as grade 2012, grade 2013 and grade 2014 were carried out the experimental for the effect of PE teaching and follow through on their physical health test, and a row of physical test data of three grades for the first time (not including offset data) by sorting and statistics, comparative analysis as a whole. The results are shown in the table below:
Table 1: Table of physical health test data of grade 2012, 2013 and 2014 for three consecutive years

<table>
<thead>
<tr>
<th>Grade</th>
<th>the First year</th>
<th>the Second year</th>
<th>the Third year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Qualified</td>
<td>Well</td>
<td>Excellent</td>
</tr>
<tr>
<td>Class 2012</td>
<td>81.6%</td>
<td>86.5%</td>
<td>82.4%</td>
</tr>
<tr>
<td></td>
<td>45.9%</td>
<td>48.4%</td>
<td>44.6%</td>
</tr>
<tr>
<td></td>
<td>5.7%</td>
<td>8.1%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Class 2013</td>
<td>80.6%</td>
<td>91.7%</td>
<td>92.3%</td>
</tr>
<tr>
<td></td>
<td>44.8%</td>
<td>50.5%</td>
<td>52.3%</td>
</tr>
<tr>
<td></td>
<td>4.6%</td>
<td>10.1%</td>
<td>10.7%</td>
</tr>
<tr>
<td>Class 2014</td>
<td>81.8%</td>
<td>91.3%</td>
<td>92.4%</td>
</tr>
<tr>
<td></td>
<td>46.3%</td>
<td>51.2%</td>
<td>53.7%</td>
</tr>
<tr>
<td></td>
<td>5.1%</td>
<td>10.3%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

The statistical data showed that there was no significant difference in the indicators of physical health test in the first year, but there were significant differences in the second and third year. The qualified rate, well rate and excellence rate of Students in grade 2013 and 2014 in the second year and third year are better than grade 2012 overall. The grade 2013 and grade 2014 students have a rising trend in the next three year, such as the passing rate, good rate and excellence rate of Students in grade 2013 and 2014 in the second year and third year are significantly higher than the first three aspects, and the result also is better than the levels of grade 2012 students, especially the largest gap in third year. At the same time, the data of grade 2012 students in the second year have been greatly improved compared with the first year, but the third year data is began to decline. In addition, the indicators of physical fitness for students of grade 2013 and 2014 in the three years, such as endurance, speed, strength, and vital capacity, showed an increasing trend, among which the indicators of physical fitness and vital capacity were significantly improved. It can be seen that physical education activities and the processes of PE teaching in three consecutive years have a positive impact and positive promotion on the physical health level of university’s students, and is better reflected from the data of physical fitness test as. the effect of the implementation of the physical education teaching mode of “whole integration of curricular and extracurricular learning” in universities.

2) Students’ Investigation on the Implementation Effect of Teaching Reform

In order to fully understand the actual implementation effect of the physical education teaching mode of “whole integration of curricular and extracurricular learning “in universities, was conducted a questionnaire survey among grade 2014, and grade 2015 students in W University. This questionnaire evaluates the reform of PE teaching from six aspects: in-class + extracurricular, online + offline, peacetime + final, club teaching mode, healthy brisk walking, teaching mode and implementation.
Reform Effectiveness of PE Teaching Model from the Perspective of Innovative Talents Cultivation in Universities: a Example of W University

Figure 1: Grade 2014 Students’ overall evaluation of PE Teaching Reform

Table 2 Statistical table of the evaluation of college Sports by students of grade 2014

<table>
<thead>
<tr>
<th></th>
<th>Curricular and extracurricular learning</th>
<th>Online + Offline</th>
<th>Peacetime + Term end</th>
<th>CLub teaching</th>
<th>Healthy brisk walking</th>
<th>Implementation of extracurricular classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Votes</td>
<td>Percentage</td>
<td>Votes</td>
<td>Percentage</td>
<td>Votes</td>
<td>Percentage</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>173</td>
<td>17.30%</td>
<td>376</td>
<td>37.60%</td>
<td>140</td>
<td>14.00%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>520</td>
<td>52.00%</td>
<td>263</td>
<td>26.30%</td>
<td>614</td>
<td>61.40%</td>
</tr>
<tr>
<td>Common satisfaction</td>
<td>138</td>
<td>13.80%</td>
<td>204</td>
<td>20.40%</td>
<td>153</td>
<td>15.30%</td>
</tr>
<tr>
<td>Dissatisfaction</td>
<td>169</td>
<td>16.90%</td>
<td>157</td>
<td>15.70%</td>
<td>93</td>
<td>9.30%</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.00%</td>
<td>1000</td>
<td>100.00%</td>
<td>1000</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Table 2 is shows that the evaluation on the PE teaching reform from grade 2014 students: the 2014 students’ overall evaluation of the teaching reform is good, accounting for 88.62% of the students hold a positive attitude. Among this reform, the highest satisfaction is achieved in the implementation of extracurricular classes (45.4%), followed by the online + offline learning mode (37.6%), and the third is the club teaching mode (31.6%). Most students believe that these three reforms are the most effective and meet the actual needs of students. However, only 14% of the
students think it is very good in peacetime + final assessment which is relatively low indicating that the assessment mode of peacetime + final assessment needs to be further optimized. The rate of “dissatisfaction” of club mode and extracurricular long-distance running is the lowest as only 1.4%, which fully reflects that most students especially like club activity mode and extracurricular long-distance running in our school, which should be vigorously promoted. However, the three options of after-class execution, in-class + after-class, and online + offline are highly rated by students, indicating that the after-class execution is unsatisfactory and uneven. A small number of students fail to truly participate in it and benefit from it. So the effective measures should be taken for continuous improvement.

Table 3 Statistical table of the evaluation of college Sports by students of grade 2015

<table>
<thead>
<tr>
<th></th>
<th>Curricular and extracurricular learning</th>
<th>Online + Offline</th>
<th>Peacetime + Term end</th>
<th>Club teaching</th>
<th>Healthy brisk walking</th>
<th>Implementation of extracurricular classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Votes</td>
<td>Percent-</td>
<td>Votes</td>
<td>Percent-</td>
<td>Votes</td>
<td>Percent-</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>410</td>
<td>43.10%</td>
<td>412</td>
<td>43.40%</td>
<td>473</td>
<td>49.90%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>318</td>
<td>33.50%</td>
<td>283</td>
<td>30%</td>
<td>271</td>
<td>28.60%</td>
</tr>
<tr>
<td>Common satisfaction</td>
<td>170</td>
<td>18.00%</td>
<td>196</td>
<td>20.60%</td>
<td>172</td>
<td>18.20%</td>
</tr>
<tr>
<td>Dissatisfaction</td>
<td>51</td>
<td>5.40%</td>
<td>58</td>
<td>6.10%</td>
<td>33</td>
<td>3.48%</td>
</tr>
<tr>
<td>Total</td>
<td>949</td>
<td>100.00%</td>
<td>949</td>
<td>100.00%</td>
<td>949</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

It can be seen from Table 3 that 92.41% of grade 2015 students hold a positive attitude towards the PE teaching reform, it indicating that the teaching reform has achieved remarkable results. Among them, the degree of satisfaction of course evaluation in normal times and at the end of the semester is the highest with 49.9% Percentage, followed by the club teaching mode with a proportion of 48.6%. Most students believe that these two reforms are the most effective and meet the actual needs of students. The “dissatisfaction” evaluation showed that healthy brisk walking ranked first, reaching 16.3%, indicating that there were some problems in the form or the organization process of healthy brisk walking. The second is the teaching mode of the club with 7.7% Percentage students are not satisfied with it, which indicates that the implementation level of activities in various clubs is uneven, and the participation of students is different. Therefore, it is necessary to strengthen the management
of club activities and formulate more effective improvement measures in response to the problems.

In general, most students of grade 2014 and 2015 hold a positive attitude towards the reform of Physical Education course, with high recognition for each item. However, improvement should be made in the organization of extracurricular + in-class and online + offline learning, and should be strengthened in management and implementation of club activities.

4. Conclusions and Suggestions

(1) Conclusions

According to the construction of the high level university of teaching and research, and which innovation goal of “two type” talent training mode combined with the actual, after a long period of college sports teaching reform practice explore its characteristic gradually, after building the physical education teaching mode of “whole integration of curricular and extracurricular learning “in universities has carried on the system reform and practices ,is focus on the teaching curriculum, the organization forms, teaching contents, practice teaching, general education, teaching evaluation and so on. This is a kind of new PE teaching pattern to meet the needs of innovative talent training in all university that is always follow the education concept of “centered on students’ development” as the instruction, the fully integrated combination of physical education teaching and extracurricular physical education learning and physical education extracurricular activities throughout the whole university stage, through the design of compulsory courses and the optional general courses of physical education quality, advocated that under the guidance of teachers, students should be the main body and actively participate in the whole process of PE teaching.

From the results of the study, the physical education teaching mode of “whole integration of curricular and extracurricular learning” in universities is optimized from the original class modified PE teaching mode in the internal and external integration which effect is obvious that plays the positive role for students’ physical health promotion, the effect of teaching reform in higher recognition, can solve problem for PE courses and extracurricular physical exercise is disconnect. [5] and changed the problem of the separation of PE learning and the extracurricular physical exercise. It is worth popularizing in the corporation, for further practice.

(2) Suggestions

At the same time, college sports “integration of all order inside and outside the whole class” teaching mode has also exposed some problems in the process of implementation, such as the course content, course selection form, class time, and online learning, class teaching organization and the comprehensive evaluation and the club activities inside and outside organizations, as well as more needs to be improved, should be integrated and comprehensive aimed at problems, realizes the integrity, continuity, collaborative teaching and openness, makes the sports teaching
from the discipline structure to study structure [6], continuously improve the effect of
college sports teaching reform and enhance the teaching mode of wide suitability,
And adapt to the trend of talent training mode innovation, and provide a valuable
reference for the reform and development of college physical education in China.

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