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*Research Article*

# Comprehensive Evaluation of Teaching Quality of Public Physical Education in Colleges and Universities

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## Abstract

In view of how to accurately evaluate the quality of public physical education in colleges and universities, this paper proposes a new comprehensive evaluation model of teaching quality based on the characteristics of public physical education in colleges and universities. Firstly, this paper introduces the research status of the evaluation of physical education teaching quality in colleges and universities. Then, it studies the object and teaching characteristics of public physical education in colleges and universities. Finally, it proposes a new comprehensive evaluation model of teaching quality for public physical education in colleges and universities. The survey shows that the model proposed in this paper can make a comprehensive evaluation of the teaching quality of public physical education in colleges and universities. The research results of this paper provide a theoretical basis for further improving the teaching quality of public physical education in colleges and universities, provides tools for the specific teaching of public physical education in colleges and universities and some help for the achievement of the overall teaching objective of higher education.

## Keywords

Public Physical Education • Teaching Quality Evaluation • Comprehensive Evaluation Model • Higher Education

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In order to further improve the accuracy of the comprehensive evaluation of public physical education in colleges and universities, this paper conducts an in-depth study on the comprehensive evaluation of teaching quality based on the characteristics of public physical education in colleges and universities.

Since the establishment of public physical education in colleges and universities, how to accurately evaluate the teaching quality of the curriculum to further improve the teaching effect of the curriculum and the physical quality of college students has always been a hot spot for the researchers and practitioners of physical education. There is also a view that the level of physical education directly affects the overall effect of higher education. In the previous research work, some researchers focus on the physical education teachers and believe that the continuous improvement of the ability of physical education teachers and the maintenance of professional quality are very important to the teaching effect, and the improvement model of the professional skills of teachers under the new curriculum conditions is studied (Sinelnikov, 2009); some researchers have evaluated physical education from the perspective of social culture. This level of evaluation is relatively macroscopic and the impact of physical education on social culture is more comprehensively introduced (Hay, 2013); some researchers adopt the research ideas from "result" to "cause" and carry out the methodology research on the motivation of physical education according to the objective of physical education (Gimeno & García-Mas, 2010); some researchers take students as the research object and deeply studies the influence of students' physical quality on their final academic achievement (Siegel, 2006); some researchers have summarized the evaluation of teaching quality from the dimension of sports and sports history (Hofmann, 2014); some researchers use the combination of qualitative analysis and quantitative analysis to expand the evaluation method of the effect of physical education (Hensley, 1997). In addition, some researchers have improved the existing evaluation methods from the perspectives of the evaluation premise of physical education, measurement of evaluation authenticity, unified teaching evaluation discourse and introduction of fuzzy mathematics knowledge. However, it basically does not break through the framework of existing researches – (Hay & Penney, 2009; Mintah, 2003; Chan, Hay & Tinning, 2011; Mishra, Jain & Hooda, 2016). Although the predecessors have done a lot of useful research work in the evaluation of physical education, the research on the public physical education for different majors still needs to be further deepened.

In order to deeply study the comprehensive evaluation of the teaching quality of public physical education in colleges and universities, this paper puts forward a new comprehensive evaluation model of teaching quality based on the analysis of the research status of the evaluation of the physical education quality in colleges and universities and aiming at the object and teaching characteristics of public physical education in colleges and universities. Also, the validity of the model is verified by empirical analysis. The research results in this paper not only provide a new method for the evaluation of the teaching quality of public physical education in colleges and universities, but also provide a theoretical basis for the teaching improvement of this curriculum.

The first part of the thesis is the introduction. The second part introduces the research status of the evaluation of physical education quality from three different perspectives: student evaluation, teacher evaluation and teaching effect evaluation. The third part analyzes the object and teaching characteristics of public physical education in colleges and universities. The fourth part presents a new comprehensive evaluation model of teaching quality and the effect of this model is empirically analyzed. The fifth part is the conclusion.

## **Research Status of the Evaluation of Physical Education Teaching Quality in Colleges and Universities**

According to different classification standards, there are different classification results for the evaluation of physical education teaching quality in colleges and universities. For example, according to different research paths, the evaluation of physical education teaching quality in colleges and universities can be divided into qualitative evaluation and quantitative evaluation; according to different research perspectives, the evaluation of physical education teaching quality in colleges and universities can be divided into students' evaluation of teachers, teachers' evaluation of students and the evaluation of teaching effect. This paper adopts the latter classification criteria and expounds the research status of students' evaluation of teachers, teachers' evaluation of students and the evaluation of teaching effect.

### **Students' Evaluation of Teachers**

The module of students' evaluation of teachers is one of the important components of the evaluation of physical education teaching quality in colleges and universities. The main purpose of this module is to evaluate the professional performance of teachers in the teaching process from the perspective of students. As a direct implementer of teaching activities, the knowledge reserves and the teaching level of teachers are of great importance to the normal development of the teaching process. The qualitative or quantitative evaluation of teachers' teaching from the perspective of students, on the one hand, can strengthen the management of the deficiency of individual teachers; on the other hand, it can also provide suggestions for the promotion of certain types of teachers. At the implementation level, the means of the evaluation for teachers mainly rely on the questionnaire survey method and the analytic hierarchy process.

### **Teachers' Evaluation of Students**

The module of teachers' evaluation of students is also an important part of the evaluation of physical education teaching quality in colleges and universities. The main purpose of this module is to evaluate the examination results of students in the teaching process from the perspective of teachers. As a direct beneficiary of teaching activities, the knowledge acquisition and ability improvement of students will determine whether the teaching objectives have been achieved. The qualitative or quantitative evaluation of students' learning from the perspective of teachers, on the one hand, can provide targeted counseling for individual student; on the other hand, it can also give reference to the teaching of certain groups of students. At the implementation level, the means of the evaluation for students mainly rely on expert assessment methods such as quizzes and final tests, questionnaires and analytic hierarchy process.

### **Evaluation of Teaching Effect**

The module of the evaluation of teaching effect is also an important part of the evaluation of physical education teaching quality in colleges and universities. The main purpose of this module is to integrate the module of students' evaluation of teachers with the module of teachers' evaluation of students from the third party perspective. The final evaluation of the teaching quality is given based on some calculation model agreed by the parties involved in the teaching activities. Teaching activities are jointly participated by teachers and students, so the final evaluation of the teaching effect also needs the effective integration of the evaluation of teachers and students. Accurate and reasonable evaluation of the teaching effectiveness is beneficial to master the rules of curriculum teaching, formulate follow-up teaching plans and arrange relevant teaching content.

## **Objects and Teaching Characteristics of Public Physical Education in Colleges and Universities**

### **Objects of Public Physical Education in Colleges and Universities**

The public physical education is opened for all majors in colleges and universities, which has the commonality of general public courses and the particularity of this course. In all public curriculum, public physical education has the most comprehensive coverage and the composition of objects is the most complex. The content of the course and the teaching process are the most flexible and it is the most difficult to evaluate the teaching effect. The objects of public physical education has the following characteristics. First, the teaching objects have a high degree of participation in physical education curriculum, but they are not fully aware of the importance of physical education. Some teaching objects do not have a clear understanding of the teaching objectives of physical education curriculum. Second, the teaching object has different degree of recognition of the teaching method of physical education curriculum. Students from some majors have a high degree of recognition of the teaching method required by the existing syllabus while students from other majors believe that the teaching method is out of touch with the reality, which are those who participate in the physical examination at college entrance examination. Third, the teaching object pays insufficient attention to the theoretical foundation of the physical education curriculum. They are not interested in the theoretical knowledge in the teaching process. After the course, they have insufficient theoretical knowledge reserve. Fourth, the teaching object often has higher expectation for teachers, not only for high-level teaching skills, but high standards of demonstration skills.

### **Teaching Characteristics of Public Physical Education in Colleges and Universities**

Due to the complexity of teaching objects, the teaching of public physical education in colleges and universities has different characteristics from other public courses. The teaching characteristics of public physical education classes mainly include the following aspects. First, the teaching objectives of public physical education in colleges and universities are not flexible enough. Although the situation has been adjusted based on the actual physical conditions of students in different majors have been adjusted, there is still room for

improvement in the individualized setting of teaching objectives. Second, the teaching content of public physical education in colleges and universities is outdated. Since there are many factors involved in teaching reform and the interaction mechanism between teachers and students is rigid, the setting of teaching content often lags behind the actual needs. Third, the teaching resources of public physical education in colleges and universities are not balanced enough. Due to the limitation of geographical conditions or economic conditions, the teaching resources of public physical education between different universities in different regions are also different. When teaching venues and sports equipment cannot be effectively guaranteed, it will exert negative impact on the teaching enthusiasm of teachers, learning initiative of students and the ultimately teaching effectiveness. Fourth, the teaching evaluation standards of public physical education in different universities are different. Physical education teachers under different teaching conditions, educational objects under different physical conditions, lack of flexible and scientific teaching evaluation mechanism, and the teaching evaluation results that are inconsistent with the actual situation will have a certain negative impact on teachers and student groups.

## A New Comprehensive Evaluation Model of Teaching Quality

### Introduction to the Comprehensive Evaluation Model

The comprehensive evaluation model proposed in this paper consists of four parts: the module of students' evaluation of teachers, the module of teachers' evaluation of students, the module of teaching effect evaluation module and the module of relaxation coefficient. The logical relationship between these modules is shown in Fig. 1.

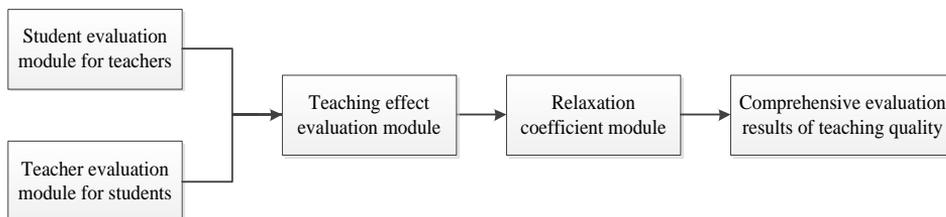


Figure 1. A new comprehensive evaluation model of teaching quality.

It can be seen from Fig. 1 that the module of students' evaluation of teachers and the module of teachers' evaluation of students are parallel and the output of these two modules are regarded as the input of the module of teaching effect evaluation. The module of teaching effect evaluation is not the final result but the output of the module also needs to be superimposed by the relaxation coefficient module. The output of the relaxation coefficient module is the final evaluation result of the teaching quality. The modules shown in Figure 1 are described in detail below.

**Module of Students' Evaluation of Teachers:** This module mainly draws students' evaluation of teachers through questionnaires and analytic hierarchy process. The design of the questionnaire survey is generally completed by experts in the field of physical education and senior physical education teachers. The content of

the questionnaire can be composed of subjective questions and objective questions and the relationship between the two can be determined according to the actual situation. In the analytic hierarchy process of this module, each index content and correspondence in the target layer and object layer are as shown in Table 1.

Table 1  
*The Content and Corresponding Relationship of Each Level of Indicators in the Student Evaluation Module for Teachers*

Target level indicator	Object layer indicators
Teaching attitude	Serious teaching Patient teaching Strict teaching
Teaching method	Teaching in accordance with student's aptitude Teaching can mobilize student's interest Accurately standardized demonstration actions

**Module of Teachers' Evaluation of Students:** The module mainly draws teachers' evaluation of students by quizzes, final exams, questionnaires and analytic hierarchy process. The test questions are designed by the course teacher and the test results are also recorded by the course teacher. The design of the final test and questionnaire survey is generally completed by experts in the field of physical education and senior physical education teachers. The questions in the final exam and questionnaire contents can be composed of subjective questions and objective questions. The score of the quizzes, final exams and questionnaires can be set by themselves. The weight set for the three is 20%, 50%, and 30%, respectively in this paper. In addition, in the hierarchical analysis process in this module, each index content and correspondence in the target layer and object layer are as shown in Table 2.

Table 2  
*The Content and Corresponding Relationship of Each Level of Indicators in the Teacher Evaluation Module for Students*

Target level indicator	Object layer indicators
Learning attitude	Hard work Proactive Have a clear goal
Ability improvement	Master the knowledge learn by analogy Comprehensive quality

**Module of teaching effect evaluation:** The weight coefficient of each index in the target layer is obtained by the hierarchical analysis process through the module of students' evaluation of teachers and module of teachers' evaluation of students. Assuming that the weight of each index in the target layer is the same, the vector A can be obtained:

$$[\text{Teaching attitude, teaching method, learning attitude, ability improvement degree}] = [0.25, 0.25, 0.25, 0.25] \tag{1}$$

**Relaxation coefficient module:** Different relaxation coefficient vectors are introduced for different majors. The relaxation coefficient vector needs to be determined by physical education experts based on the physical fitness of students. Assuming that the relaxation coefficient vector of a certain major is B:

$$[-0.03, -0.03, 0.01, 0.05] \tag{2}$$

Then, the weight vector on which the final comprehensive evaluation results of teaching quality depend is:

$$C = A + B = [0.22, 0.22, 0.26, 0.30] \tag{3}$$

**Empirical Analysis of Model Effect**

Five comprehensive universities in the western region are selected as research objects, and the teaching quality of public physical education opened in these universities is comprehensively evaluated. Teachers, students and academic departments participate in the recognition survey of the evaluation results. The survey results are shown in Table 3.

Table 3  
*Survey Results of Recognition of Comprehensive Evaluation of Public Physical Education Teaching Quality*

University name	Comprehensive evaluation of teaching quality	Teacher group recognition	Student group recognition	Academic department recognition
University 1	86	90%	87%	85%
University 2	84	92%	85%	91%
University 3	91	93%	89%	82%
University 4	77	87%	92%	90%
University 5	88	91%	90%	89%

It can be seen from Table 3 that the comprehensive evaluation score of public physical education in five universities have gained a high degree of recognition among teachers, students and academic departments, which indicates that the model proposed in this paper has achieved an accurate comprehensive evaluation of the teaching quality of public physical education in colleges and universities.

**Conclusion**

This paper studies the comprehensive evaluation of the teaching quality of public physical education in colleges and universities. Firstly, the research status of the teaching quality of public physical education in colleges and universities is introduced from different perspectives. Then, the object and teaching characteristics of public physical education in colleges and universities are deeply analyzed. Finally, a new comprehensive evaluation model of teaching quality is proposed. The empirical analysis shows that the quality comprehensive evaluation score obtained by this model proposed in this paper has been highly recognized by all parties. The research results of this paper provide a theoretical model for the accurate evaluation of the teaching quality of public physical education in colleges and universities and also provide a useful reference for the evaluation of the teaching quality in other disciplines of higher education.

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