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Quality Evaluation and Optimization Methods of Universities Physical Education Teaching in Henan Province, China

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ABSTRACT

This study aims to determine the quality evaluation and optimization methods of physical education teaching in the universities in Henan Province, China, in order to formulate a strengthening development plan. Through high-quality physical education teaching, students can master scientific sports skills and methods, enhance their physical fitness, and provide healthy protection for their study and life.This study was conducted in five universities in Henan Province, China, namely: Henan University, Luoyang Normal University, Zhengzhou University, Henan University of Science and Technology University and Zhengzhou Sias University. In these universities, physical education is a compulsory course for first-year and second-year students. The students were the respondents. They were selected using random sampling techniques. This study used simple random sampling, which means that each possible sample drawn from the population has the same probability of being drawn.

KEYWORDS

Physical Education; Teaching; Quality Evaluation.

1. INTRODUCTION

School physical education is an important link to cultivate the all-round development of morality, intelligence and body, which is of great significance to effectively improve the quality of higher education, train innovative talents to meet the needs of the times, and provide talents support for the modernization. In recent years, the state has been attaching more and more importance to school sports, which is the cornerstone of education. Therefore, to do a good job in school physical education is not only an inevitable requirement for comprehensively implementing the national educational policy and implementing quality education, but also a strategic basis for creating a powerful country with talents and human resources.

The purpose of this study is to solve the problem of establishing a comprehensive and scientific evaluation indicator that can better reflect the quality of teaching and student development. Ensure that the evaluation results can truly feed back into teaching reform and teacher development, and promote the continuous improvement of teaching quality. Invite students, parents, society and other stakeholders to participate in the evaluation to enhance the representativeness of the evaluation results. Mobilize teachers' initiative and sense of responsibility to better integrate evaluation work into teaching practice. In short, these research purposes are aimed at solving existing problems in university physical education teaching evaluation, continuously optimizing the evaluation mechanism, improving the scientific and effective evaluation, and ultimately promoting the continuous improvement of the quality of university physical education teaching and the all-round development of students.

2. STATEMENT OF THE PROBLEM

This study intends to determine the quality evaluation and optimization methods of universities physical education teaching in Henan Province, China.

Specifically, this study aims to shed light on the following questions:

(1) What is the profile of the respondents in terms of:

1) Sex

2) Age

3) Affiliation school

(2) What is the teachers' level of preparation in terms of:

1) Teaching guiding ideology

2) Teaching objectives

3) Teaching plans

(3) What is the level of teachers' instruction in terms of:

1) Teacher ability

2) Infrastructure and Sports tool

3) Field and Gymnasium

4) Teaching content

5) Teaching method

6) Teaching management

(4) What is the students' evaluation of instruction in terms of:

1) Student experience

2) Course effect

(5) Is there a significant difference in the students' evaluation of instruction when grouped according to profile?

(6) Is there as significant relationship between teachers' preparation and students' evaluation of instruction, and teachers' instruction and students' evaluation of instruction?

(7) What optimization method can be proposed based on the study results?

3. HYPOTHESIS

Based on the points mentioned in this study, the researchers proposed the following hypothesis at the significance level:

H1. There is no significant difference in the students' evaluation of instruction when grouped according to profile.

H2. There is no significant relationship between teachers' preparation and students' evaluation of instruction, and teachers' instruction and students' evaluation of instruction.

4. SCOPE AND DELIMITATION

This study determined the quality evaluation and optimization methods of universities physical education teaching. This study conducted a detailed evaluation of students and the physical education teaching practice process.

The survey subjects of this study are college students, and the students in this study include students from multiple majors. This study was conducted in five selected universities in Henan Province, China, namely: Henan University, Luoyang Normal University, Zhengzhou University, Henan University of Science and Technology University and Zhengzhou Sias University. In these universities, physical education courses are compulsory courses for first- and second-year students.

5. RESEARCH DESIGN

This quantitative study used the descriptive correlational design to describe and analyze the relationship between variables.

Descriptive correlation design is a simple and effective quantitative research method to comprehensively determine the relationship between variables and provide a basis for subsequent causal research. It examined the relationship between various elements of college physical education teaching and provide a basis for further optimization of teaching.

6. RESULTS, ANALYSIS, AND INTERPRETATION

6.1. The Profile of the Respondents

Tables 1-3 present the profile of the university student respondents in terms of sex, age and affiliated university.

On Sex.

Table 1. Frequency Distribution of Respondents' Profile in Terms of Sex

Sex	Frequency	Percentage
Male	171	46.2%
Female	199	53.8%
Total	370	100%

Table 1 shows the frequency distribution of the physical education student respondents' profile in terms of sex. 171 or 46.2% of the student respondents are male while 199 or 53.8% were female. The findings revealed that most of the student respondents were female. The gender situation of students in university physical education teaching will vary due to various factors. Teachers need to flexibly adjust teaching content and methods according to the actual situation to ensure teaching effects and students' learning experience.

On Age

Table 2. Frequency Distribution of Respondents' Profile in Terms of Age

Age	Frequency	Percentage
18-19 years old	133	35.9%
20-21 years old	152	41.0%
22-23 years old	71	19.2%
Above 24 years old	14	3.9%
Total	370	100%

Table 2 shows the age distribution of student respondents, 133 or 35.9% of the student respondents were between 18-19 years old, while 152 or 41.0% of the respondents were between 20 and 21 years old. Additionally, 71 or 19.2% of the student respondents were between 22 and 23 years old, while 14 or 3.9% of them were 24 years and above.

The findings showed that more student respondents are in the age group of 20 to 21 years. The number of students in university physical education teaching will be affected by many factors. Regardless of the number of students, teachers need to reasonably arrange teaching content and teaching methods according to the actual situation to ensure that more students love physical education courses.

The Affiliated University.

Table 3. Frequency Distribution of Respondents' Profile in Terms of The Affiliated University

Affiliated University	Frequency	Percentage
Henan University	76	20.5%
Luoyang Normal University	71	19.2%
Zhengzhou University	78	21.2%
Henan University of Sci. and Tech.	74	19.9%
Zhengzhou Sias University	71	19.2%
Total	370	100%

Table 3 shows the distribution of university affiliations of student respondents,76 or 20.5% of the student respondents are from Henan University, while 71 or 19.2% are from Luoyang Normal University. In addition, 78 or 21.2% of the student respondents were from Zhengzhou University, 74 or 19.9% of the student respondents were from Henan University of Sci. and Tech., and 71 or 19.2% were from Zhengzhou Sias University. The survey results show that more student respondents are from Zhengzhou University. Understand the physical education activities, needs and opinions of students in different universities and provide effective research data for the improvement and optimization of university physical education teaching quality.

6.2. Level of Teaching Preparation

Table 4 shows the student respondents' cognition of the degree of preparation for university physical education teaching. For the student respondents, the weighted average of the first item "Teaching Guiding Ideology" is 2.43, and the qualitative description is "disagree", indicating that many student respondents do not have a clear understanding of the teaching guiding ideology of their university.

The weighted average of the second item "Teaching Objectives" is 2.42, and the qualitative description is "disagree", indicating that many student respondents believe that physical education courses can basically be implemented in accordance with the requirements of Teaching Objectives. The weighted average of the third item "Teaching Plans" is 2.42, and the qualitative description is "disagree", indicating that most student respondents are not satisfied with the current physical education teaching plan. The weighted average of the fourth item "will adjust the teaching plan according to the feedback on the course effect" is 2.42, and the qualitative description is "disagree", indicating that the physical education teaching plan formulated by the university where the interviewed students are located failed to respond to students' feedback on physical education courses in a timely manner and modify the teaching plan based on the feedback.

Table 4. Level of Teaching Preparation

	Items	Mean	SD	Verbal Description	Interpretation	Rank
1	Teaching Guiding Ideology	2.43	0.36	Disagree	Poorly Prepared	1
2	Teaching Objectives	2.42	0.42	Disagree	Poorly Prepared	2.5
3	Teaching Plans	2.42	0.39	Disagree	Poorly Prepared	2.5
	Overall	2.42		Disagree	Poorly Prepared	

Legend: 3.51-4.00 -Strongly Agree/Highly Prepared; 2.51-3.50 – Agree/Moderately Prepared; 1.51-2.50 – Disagree/ Poorly Prepared; 1.00-1.50 – Strongly Disagree/Not Prepared.

6.3. Level of Teachers' Instruction

Table 5. Level of Teachers' Instruction

	Items	Mean	SD	Verbal Description	Interpretation	Rank
1	Teacher Ability	2.42	0.37	Disagree	Poor	4.5
2	Infrastructure and Sports Tool	2.42	0.45	Disagree	Poor	4.5
3	Field and Gymnasium	2.43	0.35	Disagree	Poor	1.5
4	Teaching Content	2.43	0.36	Disagree	Poor	1.5
5	Teaching Method	2.42	0.43	Disagree	Poor	4.5
6	Teaching Management	2.42	0.39	Disagree	Poor	4.5
	Overall	2.42		Disagree	Poor	

Legend: 3.51-4.00 -Strongly Agree/Excellent; 2.51-3.50 – Agree/Good; 1.51-2.50 – Disagree/ Poor; 1.00-1.50 – Strongly Disagree/Very Poor.

Table 5 shows the interviewed students' cognition of the Level of Teachers' Instruction in college physical education. For the interviewed students, the weighted average of the first item "Teacher Ability" is 2.42, and the qualitative description is "disagree", indicating that many interviewed students believe that it needs to be further improved. The weighted average of the second item "Infrastructure and Sports Tool" is 2.42, and the qualitative description is "disagree", indicating that many interviewed students believe that these are directly related to the quality and effect of physical education teaching. The weighted average of the third item "Field and Gymnasium" is 2.43, and the qualitative description is "disagree", indicating that students believe that their colleges need to increase these. The weighted average of the fourth item "Teaching Content" is 2.43, and the qualitative description is "disagree", indicating that most students believe that their colleges do not meet the physical education content needs of different students. The weighted average of the fifth item "Teaching Method" is 2.42, and the qualitative description is "disagree", indicating that many interviewed students believe that teaching methods are related to the effect of physical education teaching. The weighted average of the sixth item "Teaching Management" is 2.42, and the qualitative description is "disagree", indicating that many interviewed students believe that teaching management is related to the effect and quality of physical education.

6.4. Evaluation of Instruction

Table 6 shows the Evaluation of Instruction of the interviewed students on the sports in their universities.

Table 6. Evaluation of Instruction

	Items	Mean	SD	Verbal Description	Interpretation	Rank
1	Students' Experience	2.42	0.37	Disagree	Poor	2
2	Course Effect	2.43	0.34	Disagree	Poor	1
	Overall	2.43		Disagree	Poor	

Legend: 3.51-4.00 -Strongly Agree/Excellent; 2.51-3.50 – Agree/Good; 1.51-2.50 – Disagree/ Poor; 1.00-1.50 – Strongly Disagree/Very Poor.

Table 6 shows the student respondents' perception of the Evaluation of Instruction in college sports. For the student respondents, the weighted average of the first item "Students' Experience" is 2.42, and the qualitative description is "disagree", indicating that many student respondents believe that the students' experience in sports in their college is less, because the students' experience cultivates students' various spiritual qualities through sports activities and competitions. The weighted average of the second item "Course Effect" is 2.43, and the qualitative description is "disagree", indicating that most students believe that the effect of the physical education course is not obvious enough, and the effect needs to be strengthened both physically and mentally.

6.5. Analysis of the Relationship between Teaching Preparation and Teaching

Tables 7 and 8 list the teachers' preparation for teaching, the teachers' teaching and the students' evaluation of the teaching, and whether there is a significant relationship between the two.

6.5.1. Spearman Correlation Results between Level of Preparation and Student Evaluation

Table 7. Spearman Correlation Results Between Level of Preparation and Student Evaluation

	Student Experience	Course Effect	Overall Student Evaluation
Teaching Guiding Ideology	rs = 0.673 sig =.000 moderate significant	rs =0.402 sig =.000 Moderate Significant	
Teaching Objectives	rs =0.203 sig =.011 Weak Significant	rs = 0.210 sig =.008 weak significant	
Teaching Plans	rs =0.383 sig =.000 weak significant	rs =0.199 sig =0.013 Weak Significant	
Overall Teaching Preparation			rs = 0.500 sig =.000 moderate correlation

The overall teachers' preparation is significantly related to the student evaluation. With Spearman rho coefficient (rs) of 0.500, the correlation is considered moderate. When it comes to the sub-variables of teaching preparation (guiding ideology, teaching objectives, teaching plans), and sub-variables of student evaluation (student experience, course effect) all pairwise relationship yielded significant correlation. The correlations however are mostly weak except to the relationship between teaching guiding ideology and student experience (rs = 0.673), and teaching guiding ideology and course effect (rs =0.402). Both correlations are considered moderate.

6.5.2. Spearman Correlation Results between Level of Instruction and Student Evaluation

All the pairings between the sub-variables of instruction and student evaluation yielded significant correlation. Many of the correlations however are weak. Among the standouts in terms of correlations are field and gymnasium, and course effect which are very strongly correlated (0.990). Likewise, teacher ability and student experience has a very strong correlation (rs = 0.984). The rest have moderate correlations. The overall instruction is strongly correlated to the overall student evaluation (rs = 0.808).

Table 8. Spearman Correlation Results Between Level of Instruction and Student Evaluation

	Student Experience	Course Effect	Overall Student Evaluation
Teacher Ability	rs = 0.984 sig =.000 very strong significant	rs =0.450 sig =.000 moderate significant	
Infrastructure and Sports Tool	rs = 0.661 sig =.000 moderate significant	rs =0.181 sig =.023 very weak significant	
Field and Gymnasium	rs = 0.435 sig =.000 moderate significant	rs =0.990 sig =.000 very strong significant	
Teaching Content	rs = 0.687 sig =.000 moderate significant	rs =0.404 sig =.000 moderate significant	
Teaching Method	rs = .200 sig = .012 weak significant	rs =0.207 sig =0.010 very weak significant	
Teaching Management	rs = 0.375 sig =.000 weak significant	rs =0.201 sig =.012 very weak significant	
Overall Instruction			rs =0.808 sig =.000 strong

7. CONCLUSION

Based on the findings of this study, the following conclusions were arrived at by the researcher:

(1) The sex ratio of the respondents in this study is relatively balanced. In this case, teaching content and activities usually take into account the characteristics and needs of male and female students.

Most of the respondent are between the ages of 18-21. As adult students, they have higher self-awareness and goal-orientation.

(2) The four main physical education teaching ideas in universities are: comprehensive education idea, happy sports idea, lifelong sports idea and health first idea. The goals of college physical education teaching are usually to enable students to master basic sports skills and sports knowledge, improve physical fitness and sports ability, and cultivate healthy lifestyles and active sports habits.

(3) University physical education teachers have many abilities, such as professional sports knowledge and sports skills, as well as teaching guidance and communication skills. However, there are some gaps between the teaching abilities of university physical education teachers and students' expectations. In college physical education teaching and training, some common problems with sports materials include timely maintenance, insufficient equipment, and failure to update sports tools in a timely manner. In university physical education teaching, there are insufficient venues in sports venues, gymnasiums, swimming pools, etc. Some universities may not be able to meet the needs of students for physical education teaching due to limited venues.

The content of college physical education teaching basically includes sports theoretical knowledge and sports skills learning and training. The mastery of sports skills is generally low. Most teaching methods are to use physical education teachers to demonstrate movement skills and postures, guide students to learn and imitate, and help them master sports skills. However, this teaching method is unlikely to attract more students to love sports activities. In the management of university physical education teaching, there are some problems, such as lack of physical education teaching resources, unreasonable course arrangements, improper use of venues and poor equipment management, etc., which affect the teaching order and teaching quality.

(4) Through college physical education teaching, students have gained sports theoretical knowledge and sports skills, as well as teamwork spirit and collaboration skills. However, the gains in these knowledge and skills generally lack proficiency or proficiency. . Through university physical education teaching, physical education teachers can also gain many aspects of development and gains, including the improvement of teaching skills and professional knowledge. However, there are also many problems regarding the self-development of physical education teachers, such as the lack of systematic professional training and the inability to keep up to date with the latest information. educational theories and teaching methods. The effect of physical education courses is to improve students' sports skill levels and physical fitness to varying degrees. However, students' low interest in sports exercises, single course content and insufficient teaching resources still affect the quality and effect of physical education teaching.

(5) Significant difference in the students' evaluation of instruction when grouped according to profile.

The mean ranks of the student evaluation in terms of student experience based on sex has no significant difference (Sig =.099). It means that the mean ranks of the evaluation made by the female and male students are not significantly different.

The mean ranks of the student evaluation in terms of course effect based on sex has no significant difference (Sig =.084). It means that the mean ranks of the evaluation made by the female and male students are not significantly different.

The overall student evaluation of instruction based on sex has a significant difference (sig =.032). The male students have significantly higher mean rank than the female students.

The evaluation in terms of student experience done by the four age groups have no significant difference (sig =.684). Their mean ranks are statistically the same.

The mean ranks of course effect based on the age of the respondent have no significant difference also (Sig =.994).

There is also no significant difference (Sig =.887) in the mean ranks of the overall student evaluation based on age.

There is no significant difference (Sig =.429) in the mean ranks of student experience based on the respondent's school affiliation. There is no significant difference (Sig =.090) in the mean ranks of course effect also. In terms of overall student evaluation, no significant difference (sig =.093) in the mean ranks as well.

(6) Significant relationship between teachers' preparation and students' evaluation of instruction, and teachers' instruction and students' evaluation of instruction.

The overall teachers' preparation is significantly related to the student evaluation. With Spearman rho coefficient (rs) of 0.500, the correlation is considered moderate. When it comes to the sub-variables of teaching preparation (guiding ideology, teaching objectives, teaching plans), and sub-variables of student evaluation (student experience, course effect) all pairwise relationship yielded significant correlation. The correlations however are mostly weak except to the relationship between teaching guiding ideology and student experience (rs = 0.673), and teaching guiding ideology and course effect (rs =0.402). Both correlations are considered moderate.

All the pairings between the sub-variables of instruction and student evaluation yielded significant correlation. Many of the correlations however are weak. Among the standouts in terms of correlations are field and gymnasium, and course effect which are very strongly correlated (0.990). Likewise, teacher ability and student experience has a very strong correlation (rs = 0.984). The rest have moderate correlations. The overall instruction is strongly correlated to the overall student evaluation (rs = 0.808).

8. RECOMMENDATIONS

Based on the conclusions drawn from this study, the following recommendations are made:

(1) In college physical education teaching, students' gender, age, etc. will vary depending on the school, curriculum and student group. The content and activities of physical education teaching need to take into account the characteristics and needs of male and female students and provide a variety of sports projects and teaching methods. In some special cases, physical education teachers can adopt separate teaching methods for men and women and organize physical education classes for boys and girls respectively, which can better meet the needs and characteristics of students of different genders.

(2) Considering the individual differences of students, physical education teaching should focus on personalized teaching to maximize students' learning interests and potential. Universities must focus on cultivating students' comprehensive qualities. In addition to sports skills and sports knowledge, physical education teaching should also cultivate students' comprehensive qualities such as teamwork ability, leadership, communication skills, competitive spirit and social responsibility, for their future career development and Lay a solid foundation for social life.

(3) University physical education teachers must flexibly use different teaching methods and strategies, design appropriate teaching plans according to students' characteristics and needs, and actively participate in educational training and academic exchange activities to constantly update teaching concepts and methods. Universities must increase investment in and maintenance of physical education and training equipment and improve the quality and level of teaching and training. The problem of sports venues requires universities and relevant departments to pay attention to the construction and management of sports venues, increase investment in venue resources, improve venue quality, rationally plan and manage the use of sports venues, and ensure that students can enjoy a good physical education and training environment.

(4) The content of college physical education teaching must be diversified and comprehensive, strengthening students' physical training, health knowledge, sports nutrition, sports injury protection,

etc., to help students understand the importance of health and learn to exercise scientifically and rationally. College physical education teaching methods must fully stimulate students' interest in learning, enhance their participation and enthusiasm, and allow students to participate more in sports training and competitions, accumulate experience from practice, and improve sports skills. Universities increase investment and management in physical education, establish scientific and reasonable management systems and evaluation systems, objectively evaluate students' learning conditions and teaching effects, and improve the quality of physical education and management levels.

(5) The practice and gains of university physical education teaching are not only the improvement of sports skills and physical fitness, but also the cultivation of teamwork ability, the improvement of health awareness, the cultivation of leadership, etc. For example, students can make new friends through sports activities. Make friends, increase your social circle, and enrich campus life. University physical education teaching is also very important to the development of teachers. Physical education teachers participate in more academic conferences and publish academic papers, which helps to improve professional knowledge and teaching skills. In addition, sufficient teaching resources and a good working environment are also very important.Ways to achieve good results in physical education courses include: optimizing curriculum and teaching methods, increasing investment in teaching resources, establishing a scientific and reasonable evaluation system, increasing students' participation in sports activities, etc., thereby improving teaching quality and student learning effect.

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