

# *Investigation on the Interdisciplinary Education of Physical Education and Health Curriculum in Middle Schools of Jingkai District of Nanchang City*

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**Abstract:** Through the investigation and analysis of the development degree and trend of the interdisciplinary education of physical education and health course in middle school in the curriculum standard of nine-year compulsory education -- interdisciplinary practice module in various centers of Nanchang Jingkai District, to understand the teaching situation of this course combined with other subjects knowledge in the process of practical teaching. It provides reference for the teaching reform of physical education and health course in middle school. This paper uses the method of literature, questionnaire and statistics to investigate the current situation of the interdisciplinary education of physical education and health curriculum in middle schools in Jingkai District of Nanchang City. Through the investigation and research, it is found that the development of physical education and health curriculum in middle schools has not achieved the expected effect under the background of physical education integration.

## **1. Introduction**

Interdisciplinary education refers to knowledge creation and dissemination activities involving two or more disciplines beyond a single discipline boundary. Interdisciplinary education is an important way for curriculum standards to implement core literacy requirements, realize the change of physical education and health curriculum content and learning style, and also an important starting point to cultivate students' core literacy in sports ability, health behavior and sports morality. Trained personnel in a new era, requires students to use multidisciplinary cross knowledge solution actual problem ability, realize the students' comprehensive practical ability of ascension, and sports and health course is a foreign body practice activity as the main means, to improve students' health as the main purpose of compulsory course, into the interdisciplinary subject education in the teaching practice, Break the traditional "branch of education" concept of education, effectively "multidisciplinary fusion education", the traditional once deepen the reform of PE and health course, help to achieve physical education and moral education, physical education and intellectual education, physical education and aesthetic education, physical education and law education, physical education and national defense education, the combination of enhanced comprehensive educational value of sports and health course, improving students' literacy for core.[1]

## 2. Survey Subjects and Methods

### 2.1. Respondents

In this paper, the teachers and students from 5 middle schools in Jingkai District of Nanchang City, Changbei No.2 High School, Affiliated High School of Agricultural University, Affiliated High School of Jiaotong University, Songhai Middle School and Hero School of 10th Middle School, were randomly sampled to obtain important data for the study.

### 2.2. Survey Method

Through the use of questionnaire and interview methods, this paper randomly selected 5 middle schools in Jingkai District of Nanchang City for investigation. Each school distributed 100 questionnaires to students, 5 questionnaires to teachers, and interviewed 1 sports team leader of each school. All the questionnaires were collected. Through data cleaning, 12 invalid student questionnaires were eliminated, and 488 valid student questionnaires and 20 teacher questionnaires were retained, ensuring the scientific nature of the sampling survey.

## 3. Results and Analysis

### 3.1. Analysis of Student Questionnaire Survey Results

Through the investigation and research on the interdisciplinary education of physical education and health courses in three middle schools in Nanchang Economic Development District, this study found that students are relatively approved of the interdisciplinary subject teaching and have a certain understanding of it. The development of interdisciplinary subject teaching plays a key role in the overall development of students.

#### 3.1.1. Basic Information of Students

Table 1: List of sources of questionnaires

	category	The number of	The proportion
gender	male	268	54.92%
	female	220	45.08%
age	The new moon	163	33.4%
	Lunar calendar	163	33.4%
	grade	162	33.2%

Stratified sampling method was adopted in this survey. As can be seen from Table 1, the same number of people were selected from the three grades to ensure the scientific nature of the survey data. Through data cleaning, 488 questionnaires were obtained, among which 268 were boys (54.92%) and 220 were girls (45.08%). The valid questionnaires of the three grades accounted for 33.4%, 33.4% and 33.2%, respectively.

#### 3.1.2. Analysis of Students' Physical Education and Health Course

- (1) Weekly Physical education and health courses

Table 2: Survey of weekly Physical Education and Health courses (one week)

	Section 1	Section 2	Section 3	Section 4
The number of	155	181	96	56
The proportion	31.76%	37.09%	19.67%	11.48%

According to the requirements of physical education and health curriculum standards, physical education and health curriculum in grades 7-9 should not be less than 3 class hours per week. According to the data in Table 2, schools with weekly class hours less than 3 class hours account for 68.85%, reflecting that 2/3 of schools do not fully implement the national physical education and health curriculum standards when implementing physical education curriculum plans. Healthy body is the basic premise for young people to serve the motherland and the people, is the embodiment of the vigorous vitality of the Chinese nation. The guiding ideology of health first should be set up in school education and physical education should be strengthened." School Physical education work Regulations" require primary and middle schools to ensure that students have one hour of physical activity every day, schools in the development of physical education curriculum implementation plan, should clarify the junior high school physical education and health class week class requirements, to ensure that sufficient physical education.

(2) How much students like physical education and health courses

Table 3: Survey of students' preference for physical education and health courses

	like	general	Don't like
The number of	267	161	60
The proportion	54.71%	33%	12.2%

According to the survey results in Table 3, 54.71% and 33% of students like and generally like physical education and health courses respectively; Those who did not like it accounted for 12.2 percent. From the side can reflect the attitude of students to physical education and health courses. The development of PE and health course not only can promote students' health of body and mind development, can increase the students' extra-curricular leisure entertainment projects at the same time, help students better to relax, in general, the students for the popularity of sports and health course is for sure, this is the development of sports and health courses in middle school has laid a good foundation.

(3) Students' knowledge of teaching on interdisciplinary topics

Table 4: Survey on students' understanding of interdisciplinary subject teaching

	To understand	general	Don't understand
The number of	267	158	63
The proportion	54.71%	32.38%	12.91%

Can be seen from table 4, in the survey of 488 students, 87.09% of students to the interdisciplinary subject teaching is to understand or general, only 12.91% of students do not understand the subject teaching, suggests that the interdisciplinary subject teaching in the sports teaching the application of more extensive at ordinary times, physical education teachers to dabble in different students in knowledge teaching, With development, promote the students' association for science and technology more there are, of course, the students understanding of the interdisciplinary subjects, and living is say whether teachers consciously in the teaching design to join the multidisciplinary subject education content, and guide students to use the multidisciplinary knowledge to solve problems encountered in the practice of sports science, enhances own multi-disciplinary comprehensive accomplishment.

(4) What other courses do students think physical education and health courses are closely related to

Table 5: Investigation on knowledge of other subjects often applied in physical education and health course teaching

	The number of	The proportion
Language and writing	167	34.22%
mathematics	96	19.67%
English	10	2.05%
political	45	9.22%
history	44	9.02%
biological	45	9.22%
chemical	12	2.46%
geographic	33	6.76%
physical	36	7.38%

According to Table 5, Chinese accounts for 34.22%, English accounts for 2.05% and chemistry accounts for 2.46%, mathematics accounts for 19.67%, politics and biology accounts for 9.22%, history accounts for 9.02%, geography accounts for 6.76% and physics accounts for 7.38%. The table data shows that Chinese, maths, two subjects in the application of PE and health course number is more, contact more closely, to illustrate the application of teachers' knowledge about teaching is limited to the Chinese, maths, two basic discipline, no more application of other subjects, knowledge of other subjects is relatively insufficient, there is no real understanding to the core purpose of the subject teaching, Teachers should increase the learning scope of the subjects involved in the course of physical education and health, and better promote the all-round development of interdisciplinary teaching practice.

(5)How do students think interdisciplinary education will help them personally

Table 6: Survey on the help of interdisciplinary education for students

	Broaden one's horizon	Cultivate learning ability	Increase interest in sports	other
The number of	245	160	68	15
The proportion	50.2%	32.8%	13.93%	3.07%

It can be seen from Table 6 that the application of interdisciplinary education in physical education is of great help to students in broadening their knowledge, cultivating their learning ability and enhancing their interest in sports. Interdisciplinary teaching and research in our country mostly concentrated in the colleges and universities, or even graduate school level, the 2022 edition of the curriculum standard of PE and health course offered to conduct interdisciplinary subject education in compulsory education stage, students also received help from the interdisciplinary teaching, implementing interdisciplinary subject education in middle school sports and health course, It can cultivate talents with strong interdisciplinary fusion consciousness for the country in advance of the compulsory education stage, stimulate the potential of students to engage in interdisciplinary research, and improve the comprehensive competitiveness of Chinese talents in the era of "big disciplines". [2]

### 3.2. Analysis of Teacher Questionnaire Survey Results

In the process of explaining the rules of sports development, exploring the formation process and mechanism of sports skills, and revealing the path of health, the integration of interdisciplinary thinking is a powerful engine to promote the improvement of students' sports skills, the effective use of tactics, the acquisition of discipline knowledge and the inheritance of excellent traditional culture. It is a new challenge to the teaching career of physical education teachers. Teachers should not only be professional confident, but also improve the consciousness of enterprise, innovation, reflection and

collaboration. Through questionnaire and interview of the teacher, the teacher for the core of the interdisciplinary subject teaching literacy is not deep, not according to the characteristics of the students' physical and mental development to design effective interdisciplinary subject of classroom teaching, teaching content is not in the true sense to change the traditional teaching way, ignore students' all-round development.[3]

### 3.2.1. Basic Information of Teachers

As can be seen from Table 7, there are 14 male teachers and 6 female teachers in this survey, among which 75% are teachers major, 25% are non-teachers, 40% are teachers with teaching experience less than 5 years, 35% are teachers with teaching experience 5-10 years, 15% are teachers with teaching experience 10-15 years, and 10% are teachers with teaching experience more than 15 years. Most of the physical education teachers in Jingkai District are male teachers, and most of them graduate from the major of physical education. The overall teaching team is young, relatively energetic and in the rising stage of career. They can better accept new things and are willing to carry out reform and innovation in teaching.

Table 7: List of teachers' basic information

	category	The number of	The proportion
male	gender	14	70%
female		6	30%
Normal class	professional	15	75%
The normal class		5	25%
Within five years	Length of service as a teacher	8	40%
5~10years		7	35%
10~15years		3	15%
More than 15 years		2	10%

### 3.2.2. Analysis of Teachers' Development of Interdisciplinary Subject Teaching in Physical Education and Health Course

"Compulsory Education Curriculum Standards for Physical Education and Health (2022 edition)" proposed that physical education and health should take the all-round development of students as its mission, give full play to its educational function, adhere to the combination of the concept of great education and great physical education, and cooperate with multiple subjects to improve the core quality of students' physical education and health curriculum. Schools can further improve the content of physical education and health courses according to their own teaching situation.[4]

(1) Teachers teach physical education and health courses every week

Table 8: Survey of teachers' weekly teaching of physical education and health

The length	8 sections or less	Section 9 ~12	Section 13 ~ 16	More than 17
The number of	8	5	4	3
The proportion	40%	25%	20%	15%

According to the survey results in Table 8, the proportion of 8 classes or less per week is 40%, the proportion of 9-12 classes is 25%, the proportion of 13-16 classes is 20%, and the proportion of more than 17 classes is 15% (one of which is two classes). This year, the Ministry of Education issued "< Physical Education and Health > Teaching Reform Guidelines (Trial)" proposed that primary and middle school physical education teachers are guaranteed to have 12 hours of basic teaching workload

per week, and the teachers who participated in the questionnaire had a weekly workload higher than 12 hours, even more than 20 hours. The workload of teachers is too long every week, they are tired of dealing with classroom teaching, and there is no more time for teaching design, which is not conducive to teachers to improve teaching quality. Interdisciplinary education has become empty talk in middle school physical education and health course teaching.

(2) Common teaching methods of physical education and health course

Table 9: Survey on common teaching methods of Physical education and health course

	Item inquiry method	Situational teaching method	Task driven method	Group discussion method	Teaching method	other
The number of	2	7	2	5	3	1
The proportion	10%	35%	10%	25%	15%	5%

According to the survey data in Table 9, physical education teachers have tried many teaching methods to carry out teaching. Among them, situational teaching method accounts for 35%, task-driven method accounts for 10%, project inquiry method accounts for 10%, group discussion method accounts for 25%, teaching method accounts for 15%, and others account for 5%. In the actual interview, we know that teachers use situational teaching method to achieve the best teaching effect, and students can better understand the knowledge of the course. You can see, the teacher in teaching can try a variety of teaching methods in teaching, some teaching also blended in other disciplines (mechanics, history, etc.) the content of sports teaching, but the integration of the teaching content is not interested in design, but also fully shows that interdisciplinary subject education is an effective auxiliary teaching of sports, If we can carry out special training on teaching design of interdisciplinary theme education for teachers, our young teachers will carry out interdisciplinary theme teaching better by constantly improving the teaching design of physical education classroom.[5]

(3) Do the teachers understand the teaching methods of interdisciplinary topics

Table 10: Understanding of teaching on interdisciplinary topics

	Know very well	Understand better	general	Don't understand
The number of	5	6	9	0
The proportion	25%	30%	45%	0

According to the survey results in Table 10, 25% of the teachers have a good understanding of interdisciplinary topic teaching, 30% have a good understanding, 45% have a fair understanding, and a large proportion have a good understanding. According to some teachers, the popularization of interdisciplinary teaching is not high in the school. The curriculum standard introduces the interdisciplinary teaching with more than 8000 words in the curriculum content, and shares the teaching cases of interdisciplinary teaching. Schools should actively organize physical education teachers to learn and implement curriculum standards, and promote the spread of new educational ideas among physical education teachers. Only in this way can interdisciplinary theme teaching be implemented in physical education and health courses, which is more conducive to the development of students' overall development.

(4) Whether teachers try to use knowledge of other subjects in physical education teaching

Table 11: The frequency of teachers' application of interdisciplinary topic teaching

	Very few	general	often
The number of	182	243	63
The proportion	37.3%	49.8%	12.91%

As can be seen from Table 11, teachers usually use interdisciplinary knowledge in the process of

physical education teaching. The frequency of the use is rarely 37.3%, generally 49.8% and often 12.91%. The use of interdisciplinary knowledge in teaching can strengthen students' understanding of physical education and health courses with multi-subject knowledge, which requires not only rich professional knowledge but also comprehensive development of teachers, so as to better cultivate students' comprehensive abilities. Found in talking with first-line teachers, most of the teachers in teaching skills can use multidisciplinary knowledge is analyzed, using more is, the mechanics principle explain some stroke project using friction explain the rotation problem in ball games, etc., but a whim or are limited in the teaching experience, and not for effective teaching design, As a result, the application frequency of interdisciplinary theme education in physical education is not high, which can not meet the content arrangement of 10% of each class.

(5) The way for teachers to acquire interdisciplinary knowledge in physical education

Table 12: Whether you have participated in relevant training or learning

	There are	There is no
The number of	3	17
The proportion	15%	85%

From table 12, according to the survey data of related training has 15% of the teachers involved in learning (posted online courses), only 85% did not take part in related training, in an interview on teachers understand that interdisciplinary subject teaching training for teachers is far from enough, interdisciplinary subject teaching is a kind of new teaching methods, for the young teachers, Relevant knowledge can be obtained through online search, but for older teachers, they can only carry out the teaching through training and learning the teaching methods of younger teachers, which is one of the main reasons for the lack of in-depth development of interdisciplinary topic teaching.

(6) What are the factors that influence teachers to use knowledge of other subjects in physical education

Table 13: Factors affecting the use of knowledge of other subjects in physical education

	The number of	The proportion
Acceptance of students	7	35%
Teaching ability of teacher	7	35%
Teacher's teaching experience	4	20%
School teaching conditions	1	5%
Degree of attention of the school	1	5%

According to the data in Table 13, 35% of the teachers who participated in the survey took into account the acceptance of students in their teaching, 35% thought that their teaching ability of applying knowledge of other subjects in physical education was insufficient, and 20% thought that their teaching experience was insufficient. There are 5% teachers think that school teaching conditions can not meet the use of knowledge of other subjects in physical education, and 5% teachers think that the school's attention is the factor that affects the use of knowledge of other subjects in physical education. These are the main problems in the development of interdisciplinary subject teaching.

Interdisciplinary subject teaching is the curriculum standard for physical education and health course teaching content of rigid demand, is also a challenge for physical education teachers, the new age is shouldering the cultivation of art school of comprehensive development for youth, sports and health discipline should take students all-round development as the mission, give full play to its educational function, to the education combined with the view of sports, the multidisciplinary collaboration, Enhance the core quality of students' physical education and health courses, and lay a solid foundation for students' healthy growth. [6]To strengthen the students' physical education and health curriculum at the core of the quality of ascension requires the physical education teachers guide,

so physical education teachers should constantly improve themselves, follow the footsteps of The Times, in-depth study of curriculum standard in the interdisciplinary subject of learning content, not only have solid sports skill and physical fitness, have more scientific and reasonable discipline knowledge structure and professional quality.

#### 4. Conclusion

At present, the development of physical education and health curriculum in middle schools has not achieved the expected effect under the background of physical education integration. Most teachers have not updated the knowledge of the interdisciplinary subject education proposed in the curriculum standards. In order to carry out the education in a large area in junior high school physical education classes, schools need to pay great attention to the implementation of curriculum standards and enrich teachers through the learning of the new curriculum standards. [2] Powerful teachers are the key factors to carry out the interdisciplinary theme education of physical education and health courses. Interdisciplinary theme education can train students to be good at using multidisciplinary knowledge, improve the learning effect of physical education and health courses, and experience the deep connotation and value of physical sports. Through the open area middle school sports teacher force strong, mostly graduated from normal colleges, but teaching methods need to be improved, must set up the concept of lifelong learning, follow the footsteps of the development of The Times, based on the school reality, fully relying on sports educational research group to carry out teaching form, absorb each other group members to join the discussion, form the school-based teaching and research community sports and health course, Regularly carry out interdisciplinary education exchanges and seminars, centering on the actual problems existing in the teaching process, with the help of multidisciplinary forces to propose solutions to the problems, truly implement the new educational concepts and standards of curriculum standards, and contribute their own strength to the development of education.

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