

## Demand analysis of higher vocational aerobics curriculum

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**ABSTRACT:** Aerobics has now become one of the popular public sports course options in higher vocational and technical colleges. We need to know the students' learning needs to further improve the aerobics elective course so as to achieve the goal of physical education. We investigated demands on aerobics curriculum through questionnaire survey. Participants included 200 college students who chose aerobics courses in two representative higher vocational colleges in Pingdingshan. Systematic investigation on teaching goal, syllabus, teaching facilities and evaluation methods was made. Statistical results clearly show the students' needs, and indicate that the aerobics teaching does not fully meet the students' needs for now. From the perspective of students' needs, we analyzed main factors which affect the students' learning needs from aspects of teaching, teachers and conditions. On account of the analysis results, we propose six suggestions on the curriculum construction to bridge the gap between teaching supply and learning demands.

**Keywords:** aerobics; sports curriculum; demand analysis

### 1 INTRODUCTION

Aerobics is a kind of sports fitness project that blends several different elements, such as music, dance, body shaping, gymnastics, and so forth. It is also a kind of modern aerobic exercise that can improve the flexibility, coordination and physical strength of body<sup>[1]</sup>. Compared with other sports, aerobics is a new type of sports that has the effect of both fitness and cultivation. It has special exercising way, good fitness effect, and rich entertainment value, which has a unique charm of sports. It has been an important content of implementing quality education and aesthetic education in universities and colleges. It is favored by students in higher vocational colleges and technical colleges and has become one of the public sports course options<sup>[2]</sup>.

The goal of physical education is mainly achieved by curriculum teaching. In recent years, many scholars put forward various kinds of teaching methods to improve the quality of aerobics teaching. Baisheng Fu proposed using modern education technology such as multimedia to cultivate students' aerobics choreographing capability<sup>[3]</sup>. Xiuqin Li raised voluntary cooperation in the application of aerobics teaching<sup>[4]</sup>. Dongwei Wang carried on teaching experiment research in the aerobics using action-oriented method<sup>[5]</sup>.

Juanjuan Feng advocated applying the happy teaching method in aerobics teaching. Yaling Zhang combined layered method and cooperation method and studied the method of layered cooperation<sup>[6]</sup>. Shasha Wang researched the application of sport games in the aerobics teaching<sup>[7]</sup>, etc.. These studies focused on patterns and methods of aerobics teaching, but lacked of systematic research on the goal of aerobics teaching, teaching syllabus, teaching facilities, evaluation methods in higher vocational colleges and universities. Now studies on the whole systemic courses are inadequate, and lacks of pertinence, and the researches are mostly from the perspectives of teaching instead of students' demands.

Henan province is a populous province, and students in its regional higher vocational colleges account for certain proportions of all college students. These higher vocational colleges have great similarities in characteristics of students, faculty, hardware environment, campus culture, rules and regulations. How are the students' demands on aerobics curriculum? How to adjust curriculum provision and construction? Demand is the motive force of individual behavior, and the demand of students can promote the development of Education.<sup>[8]</sup> So investigations and researches around these regional vocational college students are meaningful. As a physical education teacher in higher

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vocational colleges of Pingdingshan city, the author carried out the investigation and analysis taking Pingdingshan Institute of Education and Henan Quality Polytechnic as the research objects which are two representatives in higher vocational colleges in Pingdingshan. From the perspective of students' demands for aerobics curriculum, carry on investigation and analysis, and propose suggestions of provision and construction of curriculum.

## 2 METHODS

Through methods of literature reviews, questionnaire survey and mathematical statistics and so forth, the study demands of aerobics curriculum is investigated, and the demands are analyzed.

A number of literatures about aerobics curriculum provision and students' demands on aerobics curriculum in colleges, combining with relative knowledge of pedagogy, psychology and sociology and other disciplines, provide the reliable theory basis for the research.

On the basis of related literature review, referring scholars' researches about aerobics curriculum and learning needs questionnaires [9,10], complete the preliminary design of the questionnaire. Modify the questionnaire according to concerned experts' advices in order to achieve the requirements of the present study. Simultaneously, test the validity of the questionnaire. The Delphi method was adopted to improve the validity of the examination, opinions of six experts from two schools were solicited, eventually a consensus was reached that the questionnaire was in high conformity and the questionnaire was effective.

The freshmen and sophomores who chose the aerobics class as an elective course in the two higher vocational colleges in Pingdingshan were taken as investigation objects. The questionnaire was issued in class in an anonymous way. A random sample of 100 students who conformed to the condition from each college is extracted, with an average distribution on every grade. 200 survey questionnaires were issued while 200 questionnaires were withdrawn valid, and the valid response rate was 100%.

Using SPSS statistical software for statistical analysis, the relevant conclusions were drawn. By analogy, induction, reasoning and deduction, analysis and synthesis of the survey data were carried on and some effective feasible suggestions were put forward accordingly.

## 3 INVESTIGATION AND RESULTS

### 3.1 Attitude toward aerobics elective courses

The degree of preference reflects the individual's need for things. As can be seen from Table 1, the ratio of

students' preference for aerobics courses reaches 66.5%, indicating that the aerobics elective courses are in line with the needs of students. Yet more than half of the students are not satisfied with the aerobics elective courses. The Ministry of Education clearly stipulates that physical education required that the length of courses should not be less than 108 hours in the freshman year and sophomore year in junior colleges, and the number of students in each class of physical education in principle is limited within 30 [11]. At present, both the course hours and the population of class in aerobics elective courses in two colleges are not up to the national standard, resulting in the majority of students' learning needs cannot be met.

Table 1. Preferences for aerobics courses

Preferences	Frequency	Ratio
love it	71	35.5%
like it	62	31%
general	44	22%
don't like it	14	7%
don't like it very much	9	4.5%

Table 2. Satisfaction of aerobics courses

Attitudes	Frequency	Ratio
very satisfied	9	4.5%
satisfied	34	17%
general	58	29%
dissatisfied	76	38%
very dissatisfied	23	11.5%

### 3.2 The purpose of selecting aerobics courses

The survey shows that the main motivation of students choosing aerobics courses is to be fitness, cultivate morality, improve temperament and edify sentiment. The motivation of students learning aerobics is appropriate, as shown in Table 3.

Table 3. Motivation of choosing aerobics courses

Motivation	Frequency	Ratio
Improving physique and promoting health	62	31%
Entertainment and leisure	32	16%
Communicating	18	9%
Improve temperament and edifying sentiment	118	59%
Fitness	123	61.5%
Other	9	4.5%

### 3.3 The cognition to the course learning objectives

The survey shows that the main objections of students learning aerobics are successively to improve the physical quality, promote health, mold physique, beautify gestures, increase their own temperament and spirit, enhance their sense of art and aesthetics, strengthen the consciousness of physical exercise, etc. which is shown in Table 4.

Table 4. Students' cognitive situation of aerobics learning goals

Teaching objectives	Frequency	Ratio
Dance developing ability and learning ability	63	31.5%
Cultivating consciousness of physical exercise	81	40.5%
Team spirit	40	20%
Temperament and spirit	152	76%
Art and aesthetics	144	72%
Molding physique, and beautifying the gestures	171	85.5%
Improving the physical quality and promoting health	91	45.5%

### 3.4 Requirements of the course contents

The survey shows that the overall demands on the theoretical knowledge are lower than those on the practice. According to the analysis, what relate to the theoretical teaching contents away from practice are boring, and are the narrow range of knowledge, which does not match the students' demands, as shown in Table 5.

Table 5. Demands for aerobics teaching content

Teaching content	Frequency	Ratio
Theoretical contents	Concept, characteristics, classification and value	69 34.5%
	The principles and methods of scientific exercise	83 41.5%
	Aerobics developing method	63 31.5%
	Competition method, judicial rules	50 25%
Practical contents	Mass exercise standard routine	93 46.5%
	Campus aerobics	194 97%
	The national setting-up aerobics exercise level set	118 59%
	Self-developing aerobics	68 34%

### 3.5 Demands for teaching mode

Table 6. Demands for the aerobics teaching mode

Teaching modes	Frequency	Ratio
Conventional teaching: "Duck-stuffing" type of teaching	54	27%
Cooperative teaching: team learning and mutual promotion	110	55%
Autonomous teaching: active, relaxed and happy classroom atmosphere	127	63.5%
Half open teaching: teacher guiding and autonomous practice	159	79.5%
gradational teaching: distinguishing the characteristics and differentiated instruction	35	17.5%

Teaching mode is an important content of curriculum construction, which plays a decisive role in teaching effect. According to the survey, half open teaching mode, autonomous teaching mode, and cooperative teaching mode are highly approved by the students, as shown in Table 6. These teaching modes emphasize teamwork, interactive, relaxed and active classroom

atmosphere, and practice, which require classroom organization skills of teachers. At present, a lot of teachers keep conventional teaching modes, which are not adapted to the needs of students.

### 3.6 Demands for teaching method

The results show that the students prefer the method of demonstration and explanation, which is the main way for teachers to impart knowledge. The demonstration and explanation method is intuitive and easy to implement, which is commonly used in traditional teaching. On the other hand, the gradual method, the repetition method, and the gradient circulation method in aerobics teaching enable the student to grasp gradually from simple to difficult, and consolidate the aerobics movements. For every stages of movement skill formation, in line with difficulties of the teaching content, and students' learning situation, using a variety of methods can achieve a better teaching effect.

Table 7. Demands for aerobics teaching methods

Teaching methods	Frequency	Ratio
Method of demonstration and explanation	108	54%
Method of prompting	13	6.5%
Method of complete decomposition	54	27%
Method of repetition	19	9.5%
The gradual method	52	26%
Method of gradient circulation	25	12.5%
Method of imagery training	5	2.5%
Other	3	1.5%

### 3.7 Demands for course examination and evaluation methods

Table 8. Demands for aerobics lesson evaluation form

Evaluation form	Frequency	Ratio
Developing sets of movement	21	10.5%
Developing by groups	63	31.5%
Testing sets of movements by groups	116	58%
Testing compulsory movements separately	33	17.5%

Table 9. Demands for means of achievement evaluation

Means of achievement evaluation	Frequency	Ratio
Attendance, the final exam	36	18%
Attendance, physical performance, theory, the final exam	35	17.5%
Attendance, physical performance, stage performance, the final exam	129	64.5%

The survey shows that, teachers mostly test sets of movements by groups. The examination form is basically consistent with the demands of students. Teachers' assessment methods are relatively single. Students tend to more comprehensive and objective evaluation. As can be seen from Table 8 and 9, most of the students tend to collective assessment instead of separate assessment. This assessment is primarily to rate the quality of learned actions, routine completions, but fails to evaluate the students' development ability, and

is short of the cultivation of students' independent innovation thinking.

### 3.8 Demands for teachers' professional accomplishment

Demands for teachers' professional accomplishment mainly include four aspects: professional knowledge, scientific research abilities, teaching techniques and teaching attitude. As can be seen from Table 9, demands on these aspects remain at a higher level.

Table 10. Demands for the aerobics teachers' professional ability quality

Professional teachers' ability quality	Frequency	Ratio
Professional knowledge	129	64.5%
Scientific research abilities	47	23.5%
Educational technology	145	72.5%
Teaching attitude	168	84%

### 3.9 Demands for teaching environment

The aerobics teaching environment and conditions in higher vocational colleges in Pingdingshan city, and even in Henan province<sup>[12]</sup> are relatively weak, which are difficult to meet the demands of students. The students' demands for the aerobics teaching facilities are shown in Table 11.

Table 11. Demands for the aerobics learning facilities

Sites and facilities	Frequency	Ratio
School aerobics hall has good environment and conditions	159	79.5%
There is enough sites per capita	137	58.5%
School aerobics field is good quality	166	83%
School aerobics hall space is big enough	102	51%
Audio equipment is complete	111	55.5%
The school aerobics museum open on a regular basis	71	36.5%
Has the emergency medical equipment	48	24%

## 4 ANALYSIS OF THE MAIN FACTORS AFFECTING STUDENTS' LEARNING NEEDS

### 4.1 Teaching factors

(1) Curriculum setting. At present, the total course hours of aerobics classes in higher vocational colleges are about 56, and number of students in a class is more than 30. The course hours cannot fully meet the needs of students and the class size did not meet the relevant regulations of the state.

(2) Teaching mode. Nowadays the aerobics class still follows the traditional teacher-center mode, which did not highlight the prominent position of students. Lack of multilateral interactive activities between teachers and students with dull classroom atmosphere, did not suit the needs of students for living atmosphere, open teaching mode and relaxed class.

(3) Content of courses. What teachers teach does not adapt to what students want to learn, which affects the students' learning needs. In addition to master the basic knowledge of aerobics, the students hope to learn scientific training principles and methods and compose methods of aerobics from the theory teaching. And from practice teaching they hope to learn a variety of combined styles with appropriate difficulty aerobics.

(4) Course examination and evaluation method. The teachers' performance evaluation methods are not suitable for students' needs. Students hope that the evaluation methods can be more comprehensive, to incorporate the physical quality, learning attitude, and progress into the scope of assessment. Most of the aerobics teachers emphasized master of physical fitness and movement skills, ignoring students' individual differences, learning attitude and learning process, which bruised their self-confidence and self-esteem, and affected the needs of the students' learning.

### 4.2 Teacher factors

From the survey results, students' needs for aerobics teachers are solid professional skills, strong specialized foundations and rich teaching techniques. Each school has 1-2 professional aerobics teachers, which cannot meet the teaching needs. The rest of aerobics teachers transformed to engage in aerobics teaching from other specialties of P.E. through their own study. They didn't cultivate solid basic professional skills. The lack of systemic training makes them only stay in the basic routine level, and cannot fuse diverse aerobics movements. The title of aerobics teachers is generally low and the teaching technology is not rich enough. The lack of professional abilities affects the students' learning needs.

### 4.3 Condition factors

From the result of the survey, more than half of the students think that the facilities cannot meet their needs in aerobics teaching. They want good environmental health conditions, enough space and site, and good aerobics exercise venues. At present, the aerobics courses of two higher vocational colleges are all outdoors, and the basic facilities and equipment of aerobics teaching are not complete, which affect the enthusiasm of students to learn aerobics and their learning needs.

## 5 ADVICES AND SUGGESTIONS

### 5.1 Set clear syllabus

Due to management differences, some schools still lack aerobics curriculum construction, and there are no relative unified and clear syllabuses. Some teachers

confined to teach a set of basic movements in the aerobics class. Syllabus is a programmatic document of classroom teaching, which standardizes the course content. Formulate aerobics syllabus in line with the school teaching of vocational education and the development goals of students' body and mind, which is necessary for aerobics teaching.

### 5.2 Carefully prepare theory teaching

Students show little interests in aerobics theory, which has great relationship with teachers' theory teaching method. Most teachers pay more attention to the practice curriculum, but despise the theoretical teaching. The students' knowledge about the history and appreciation of aerobics is closely related to aerobics theoretical knowledge. Ignoring the theoretical teaching tends to cause the students' lack of aerobics theoretical knowledge.

### 5.3 Carry out teaching mode innovation

Study new teaching modes, such as the half open teaching mode, autonomous learning teaching mode, cooperative teaching mode, etc. Through educational reform projects, explore new teaching modes and put them into practice, so as to meet students' needs of teamwork, interactive, relaxed and active classroom atmosphere, and practice.

### 5.4 Adopt artistic way of teaching

Stimulate students in pursuit of beauty in aerobics by using the method of artistic. Decorate artistic scene, keep artistic teaching manner, create artistic atmosphere, select artistic music, use artistic language and artistic movements, guide artistic communications<sup>[13]</sup>, so that the students can experience the aesthetics at any time when doing aerobics exercises, and feel in harmony with beautifulness, and spontaneously love aerobics in pursuit of beauty.

### 5.5 Use multi-dimensional way of curriculum assessment and evaluation

Students' needs tend to more comprehensive and objective evaluation method, which is also according to the objective of aerobics course. Adopting more comprehensive and objective evaluation form and more means of achievement evaluation can objectively reflect the students' learning effect.

### 5.6 Improve venues and facilities

At present, most of aerobics courses are outdoors, and do not have specialized aerobics venue. The basic requirements for the teaching sites, facilities and equipment are the indoor space, performing stage, wooden floor or carpet, mirrors, handles, and audio

equipment. Specialized aerobics hall avoids the impact of weather on aerobics teaching and improve the effect of music. Performing stage helps students to see clearly the teacher's demonstration actions. Carpet or wooden floor may protect the joints and soft tissues. Mirrors enable students observe their own actions and help to improve them. Audio and video equipment may stimulate the enthusiasm of students. Multimedia equipment can not only watch the aerobics teaching and competition video, but also can record the actions of teachers and students to promote comparative study.

## 6 CONCLUSION

Aerobics is one of the most popular sports elective courses for students. The aerobics in higher vocational colleges has become a popular sports teaching curriculum in higher vocational colleges. Students' purpose to learn aerobics is clear. The demands for teaching content in both theory and practice have a higher desire for knowledge. Students hope to study in an open mode with lively teaching and relaxed atmosphere. They hope that teachers have a higher level of skills and teaching level, and desire for more complete aerobics facilities. Assessment is the most concerns for students, and the more comprehensive and objective methods are expected. The main factors that affect the students' learning needs are teaching, teachers and conditions. There is still a gap between the above factors and the needs of students. We suggest revising the syllabus, strengthening theoretical teaching, innovating teaching mode and methods, adopting multi-dimensional curriculum assessment and evaluation methods, and improving the aerobics facilities and other measures, to further meet the needs of students for aerobics courses.

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