

# The Optimization Strategy: Enhancement for Aerobics Teachers in College and Universities in China

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**Abstract:** Aerobics is one of the physical fitness activities that trains the body with easy exercise and non-excessive psychological disturbances. However, the implementation and promotion of aerobics in schools and universities is crucial, since it is the ideal place for young people to conduct physical activities with socialization. Nowadays, colleges and universities have developed their aerobics curriculum based on the needs, trends, and innovation to optimize the tools in teaching of aerobics. In the system optimization, the quality of education is monitored fairly objectively, which increases the rating of the higher education institution, stimulating the development of the range of educational services, directions and specifications of training. The purpose of the study was to determine the social and fitness value of teaching college aerobics and use of optimization strategy with multimedia, music, and dance of PE teachers in China who were teaching aerobics. Through descriptive comparative and correlational analysis, the respondents assessed low value in the indicators of psychosocial and fitness value in teaching aerobics and they hardly use optimization strategies with multimedia, music dance. The results of the differences and correlation among variables were discussed. Thus, teaching enhancement program in teaching aerobics was designed as the output of the study.

**Keywords:** Enhancement for Aerobics Teaching; Optimization Strategies; Physical Education Teachers.

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## 1. Introduction

Participating in physical activity is one of the essentials to live healthfully and longer. People's physical activity describes their fitness which also defines their health characteristics and behaviors that greatly influence their quality of life. Technically, physical fitness is a set of physical attributes of a person according to his/her ability to perform it successfully without being strained or without compromising his/her safety. Physical fitness can be health related or skill related. The former type of physical fitness reduces the well-being risk of hypokinetic disease; as basis for sports participation; and needs vigor for daily living tasks. It includes endurance in cardio-respiratory, muscle strength, body composition, and flexibility. While the latter type is composed of agility, balance, coordination, speech, power, and reaction time to enable people to participate in sports or any performance activity (Paoli & Bianco, 2015).

Aerobics is one of the physical fitness activities. It is a popular exercise safe for people of different ages. Generally, aerobics trains the body with easy exercise and non-excessive psychological disturbances. It is usually performed in stages of various types of muscle and joint flexibility exercises such as stretching, strength, and balance. It is very useful especially for the elderly to avoid injury and reduce the psychological disorders (Permadi, 2019).

Literally, the word "aerobic" means in the presence of oxygen because through this the body is able to supply adequate oxygen to sustain performance for long period of time (Franklin, 2001, as cited in Ototo, et al., n.d). Moreover, when oxygen is flowing through the body and to the muscles during aerobic workouts, it increases the blood vessels that carry oxygen. As a result, the human body can work longer without undue fatigue and more nutrients and oxygen are received by the muscles that keeps away the waste (Shahana

et al., 2010). In other words, with regular aerobics, the heart performs well in pumping oxygen in the body.

The beneficial effects of aerobics in human fitness were presented in a number of studies conducted. These studies highlighted the key role of physical activity to ensure not only the proper physical and mental growth and development, but also improvement of environmental health, working capacity and quality of life. These studies emphasized on the specific contribution of aerobic fitness in the cardiovascular endurance necessary for people. Despite the development of aerobics in literature, the most vulnerable people such as children, adolescents, persons exposed to stressful situations, and the elderly, remain understudied. For instance, adolescents experience change of lifestyle, learning environment, and place of residence which influence their work habits, social behavior, identity, and self-affirmation. With their great psychological stress, they lack physical activities considering the modern technologies contribution to their physical strain and fatigue (Prebeg et al., 2012).

Apparently, a growing number of schools have increasingly de-emphasized the importance of providing physical activity opportunities during the school day, despite emerging research that illustrated the deleterious relationship between low levels of aerobic fitness and neurocognition in children. Accordingly, a brief review of studies that link fitness-related differences in brain structure and brain function to cognitive abilities was provided. Overall, the extant literature suggested that childhood aerobic fitness is associated with higher levels of cognition and differences in regional brain structure and function. Indeed, it has recently been found that aerobic fitness level even predicts cognition over time. Given the paucity of work in this area, several avenues for future investigations were also highlighted (Chaddock et al., 2011).

The development and trends in aerobics is one way to understand the prevalent inactivity and insufficient activity in

leisure, occupational, household or mobility time of people. In fact, Whitfield et al (2021) tested the trend in aerobics overtime including its changes from 2008 vs. 2018. Their results revealed that the prevalence of inactivity was higher in 2018 than in 2008 and meeting the aerobic guideline increased nonmonotonically. Likewise, obesity was observed for adults aged 65 years and high school graduates. They concluded that though there was increase in meeting the aerobic guideline, the decreased inactivity in multidomain activity and selected domains were encouraging results, especially among subgroups historically reporting low activity participation. Thus, the recommended efforts in aerobic promotion to maintain progress among individuals and considered the transportation domain as an underutilized source of physical activity.

Therefore, the implementation and promotion of aerobics in schools and universities is crucial since it is the ideal place for young people to conduct physical activities with socialization. Physical education is the subject that encourages students to improve their behavior and attitudes toward physical activities. However, studies revealed that physical education does not involve intense or even moderate physical activities for students which were more beneficial for their health since they less exercise as they grow especially among adolescents and young adults (college students). Apparently, it has been observed that primary to senior high school students gradually reduced interest in physical education which may affect not only their academic but also their health. Their reduced interest was caused by intrinsic motivation which was connected to the students' perceptions on goal achievement. It was noted that high internal motivation could come from a task-involving motivational climates which may increase not only active participation of students in Physical Education but also developed their cooperation and effort in performance (Rokka et al., 2019).

## 2. Significance of the Study

This study would benefit the following groups of people in various aspects:

**Physical Education Teachers.** The PE teachers are usually assigned to teach aerobics or physical fitness course in college. This study may provide them option on how to optimize their aerobics classes from a traditional to a student-centered learning course. The results of the study may offer them resources that they can use in enhancing their aerobics classes.

**Aerobics Instructors.** This study reinforces their role and responsibility in improving physical fitness of individuals. The output of this study may also provide a teaching enhancement program to assist them in teaching aerobics to optimize the strengths and fitness of individuals across ages.

**Students.** The benefits of this study are not exclusive among college students but to all students who are enrolled or will enroll aerobics course. The study will provide them information on how beneficial aerobics to them in terms of physical, mental, and social health. The results of the study will present them ways on how they can enjoy aerobics even more.

**College and University Administrators.** The result of the study will encourage and support school administrators to continue professional development among physical education and aerobics teachers to equip them in optimization trend of aerobics teaching.

**Curriculum Developers.** The study will serve as a reminder to curriculum developers to optimize aerobics course in

physical education.

**Future Researchers.** This study highlights the importance of continuous research on the optimization strategy in aerobics to improve the physical activities of individuals.

## 3. Definition of Terms

The following terms were operationally used in the conduct of the study:

**Aerobics.** It is a physical exercise composed of stretching and strength training to strengthen the heart and increase the amount of oxygen in the body. It is held usually in classes in school, organization, or dance studio with students across ages.

**Aerobic Dance.** It refers to a fitness program where students are following the choreography provided by the instructor to increase physical fitness. It is usually accompanied by rhythmic music and simple dance steps.

**Fitness Value of Aerobics.** One of the focus direction of the aerobics curriculum should understand the fitness and fitness value of aerobic exercise as an important means of physical exercise outside of class. It must be designed with great practical importance to achieve national fitness by making aerobics suitable for national fitness characteristics and seeking active health through practice (Han, 2022).

**Multimedia in Teaching Aerobics.** Multimedia is the best teaching and learning tool for both teachers and students. In aerobics class, it is instrumental in the setting of teaching objectives and the process of teaching outline formulation. It is a means to carry out the training of teachers' aerobics knowledge and skills, and encourage teachers to study. And it can carry out opinion surveys among teachers and students to assess their best teaching and learning practices (Yan, 2018).

**Music in Teaching Aerobics.** It is used to cooperate with aerobics movement to make rhythmic sensation and dance steps in aerobics. It is also an exhilarant to enhance students' learning initiative, comprehensive ability, and cognitive power to coordinate the steps along with the music (Kang, 2015).

**National Fitness Plan.** It is a programmatic document, the significance of which is to advocate and promote the national fitness methods and approaches suitable for China's national conditions, and to give scientific and effective, simple, and easy to implement physical exercise methods for different people of different ages and genders (Han, 2022).

**Optimization Strategy.** It is a teaching and learning strategy in aerobics by making the best or using the most effective educational resource such as multimedia, music, and dance.

**Social Value of Aerobics.** The diversity and popularity of aerobics provide a lot of support for the development of aerobics courses in colleges and universities through the arrangement of courses from easy to difficult and the classification of teaching content according to the type of participants. While facing older groups, teachers can add more elements of square dance on the basis of general mass aerobics to ensure the exercise style suitable for different groups and achieve the purpose of fitness (Han, 2022).

## 4. RESULTS AND ANALYSIS

This section presents the results of the statistical analysis using descriptive comparative correlational analysis. It includes interpretation and discussion of results to answer the research questions.

### 1. Respondents' Profile

The descriptive statistics was used to analyze the quantifiable data of the sample population of 150 aerobics teachers which provided their descriptions or characteristics based on their sex, age, area of specialization, and years in teaching as presented in table 1.

**Table 1.** Profile of Respondents

AGE		
BELOW 30	71	47.3
31-35 YEARS OLD	45	30.0
36 - 40 YEARS OLD	19	12.7
41 AND ABOVE	15	10.0
Total	150	100.0
SEX		
MALE	75	50.0
FEMALE	75	50.0
Total	150	100.0
AREA OF SPECIALIZATION		
PHYSICAL EDUCATION	105	70.0
SPORTS MANAGEMENT	18	12.0
SPORTS TRAINING	27	18.0
Total	150	100.0
YEARS OF TEACHING		
5 YEARS AND BELOW	40	26.7
6-15 YEARS	90	60.0
16 -25 YEARS	13	8.7
MORE THAN 26 YEARS	7	4.7
Total	150	100.0

Based on the results, the sex of the teacher participants is equally distributed with the frequency of 75 for both male (50%) and female (50%). This affirms that the physical education profession in China is no longer male-dominated; that the number of female PE teachers is now proportion or gradually proportioning with the number of their male colleagues in teaching sports, exercise, and physical activities to students. Achieving gender equality in China is a requirement to ensure quality physical education and global “sports power” (Wang et al., 2021).

In terms of age, most (47.3%) of the respondents are below 30 years with the frequency of 71. Some (30%) are between 31-35 years old with frequency of 45 respondents. Few (12.7%) are 36-40 years old with frequency of 19 respondents; and a small number of 15 respondents is between 41 years old and above (10%). The results show that the respondents are young below 30 years old which is near the average age of school teachers in China which is about 27 years old (Bai et al., 2021).

Furthermore, this result supports either a sociological or psychological/developmental explanation among students. It indicated that students perceived the young PE teachers to be significantly more likeable, more competent, and a better role model (Pennington et al., 2019). Thus, age seems to be a considerable factor for PE teachers to have influence or effect to their students’ teacher perception.

In terms of area of specialization, majority of the respondents belong to physical education (70%) with the frequency of 105; some belong to sports training (18%) with the frequency of 27; and few belong to sports management (12%) with the frequency of 18. This evidently shows that most of the aerobics teachers are specialized in physical education. This result substantiate “with the progress of China’s school sports reform which includes aerobics as a new sport. As it entered university physical education in the middle of the last century, both PE teachers and students have

become inclined to it as a sport in university physical education. With the deepening of education reform, many problems have appeared in the education content, which directly affects the training of body building talents and the sustainable development of aerobics (Liu, 2021).

In terms of years of teaching, most of the respondents have 6-15 years of experience (60%) with the frequency of 90; some have 5 years and below (26.7%) of experience with the frequency of 40 respondents; few have 16-25 years (8.7%) with the frequency of 13 respondents and more than 26 years of experience (4.7%) with the frequency of 7 respondents. This shows that aerobics teachers are developing PE teachers have gained significant experience in teaching PE. This result is relative with previous research results that showed 1-5 years of teaching experience for most PE teachers (Zhou et al., 2022; Bai et al., 2021).

Therefore, the profile of respondents is evenly consisted of male and female aerobics teachers who are mostly aged of 28 years old with specialization in physical education and 6-15 years of teaching experience. Furthermore, their demographic description shows diversity in sex, age, specialization, and teaching experience which can provide meaningful assessments in the value of teaching aerobics to college students.

## 5. Conclusion

Based on the findings, the following conclusions were drawn out from the investigation:

1. Physical education teachers in China, who are teaching in aerobics in college, are equal population of men and women below 30 years old with sufficient teaching experience.

2. The low psychosocial and fitness value assessment of aerobics teaching among college students reflects the weak implementation of aerobics courses in colleges and universities which can be brought about by weak support from the higher education institutions.

3. The PE teachers’ assessment of strong disagreement in using the multimedia, music, and dance in teaching college aerobics is a clear evidence of their traditional teaching approach would have a direct impact on their students’ learning and performance.

4. Despite the diverse demographics of the PE teachers, they provided similar assessment and judgement on the teaching college aerobics with multimedia, music, and dance which bounce back to their uniformed method of teaching aerobics.

5. The PE teachers’ perceptions of the psychosocial and fitness value of teaching aerobics are independent and not necessarily associated with their traditional method in teaching aerobics to college students.

## 6. Recommendations

The pessimistic findings of the study call for the following recommendations based on optimization strategies to strengthen the construction and implementation of aerobics course and culture in colleges and universities.

1. Teachers should develop innovative ways and thinking on the teaching modes of aerobics for college students. These ways and modes should meet the actual needs of teaching using innovation and imparting their professional theoretical knowledge.

2. PE teachers should create teaching methods for aerobics

with diverse contents with integration of multimedia, music, and dance.

3. In order to give full play to the education role of aerobics, colleges and universities should first establish the sound aerobics teaching guiding ideology and establish aerobics teaching goals to establish the development of students.

4. Aerobics teaching should cultivate students' interest and hobbies in aerobics, and gradually master the basic knowledge and skills which can build their habit of lifelong exercises, motivate their innovative thinking and ability, and help achieve the goal of all-round development.

5. PE teachers should also identify the learning ability, dancing skills, and learning preference of their students prior to teaching aerobics. Through this, they will be able to scaffold and boost not only the aerobics performance of their students, but also their confidence, interest, creativity, and innovation.

6. Aerobics teachers must recognize the student's dominant position and balance the relationship between teaching and learning. One of the optimization strategies is interactive teaching mode where teachers and students communicate and exchange together which lead to students' highest learning enthusiasm and interest.

7. To achieve interactive teaching, teachers must welcome students as their co-creator of learning in the classroom by understanding their learning conditions, respecting their opinions and suggestions, and creating democratic and open learning atmosphere which creates a more conducive learning space for both of them.

8. Schools and teachers may validate the output of study to employ the optimization strategies and improve their students' learning towards positive education.

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