

THE CAUSE OF UNSUCCESSFUL PROGRESSION IN TEACHING OF SPORTS BIOMECHANICS IN PHYSICAL EDUCATION SPECIALTY AND THE SOLVING METHODS OF IT

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Sports Biomechanics is a new and intersect subject, which is an important component of physical science, and it takes an important part in actual physical education and sports training. This paper reviews the changes of status of Sports Biomechanics course in the curriculum of physical education (PE) majors in China, and analyzes the cause of the changes, and explores the ways to address the issue. Through literature search, we investigate the history and current development of Sports Biomechanics in physical education specialty and propose that Sports Biomechanics should be as a compulsory course for PE majors. Through consultations with experts of Sports Biomechanics in China, we put together few recommendations to promote this course in PE curriculum.

KEY WORDS: sports biomechanics, physical education specialty, compulsory course

INTRODUCTION: In China, the sport biomechanics, which develops along with the science technique, is a newly arisen, brink course. This is not only extends the knowledge realm of the teachers and the students in the PE department, but also becomes the essential condition of setting up the base of teaching, research and training. However, because of various reasons, the course of sport biomechanics has been changed from compulsory course to optional course, and its class hours also have been cut down continuously, even some sports colleges do not offer this course.

Focusing on the changes in status of the sports biomechanics course in the last few decades, this paper analyzes the causes of the changes, clarifies its important function in the professional training of PE majors, and probe into how to develop this course successfully, hoping to give a few helpful suggestions to it.

METHODS: The research method involved literature search, analysis and deductive methods, and expert interviews, which expatiate the history and present conditions of the sport biomechanics course, analyze the reason of the evolution, exhibit its status and summarize the ways to develop the course smoothly.

RESULTS:

The evolution of sport biomechanics course: The sport biomechanics course in China has mostly experienced "three rises and three falls" since its development. The first rise is from the 60's to the mid-80. During this period of time, sport biomechanics course has experienced from an immaturity to maturity, and then to be valued. Base on the finding of Ye Yongyan and Zhu Yihua (1997), in 1980's, according to the cultivating need of the PE major in high normal schools, the original Ministry of Education made sport biomechanics as a compulsory course of the PE department, and an indispensable major course in the process of physical education. In the "Teaching Programme Seminar of High Normal Schools' PE major" which convoked in 1986 Sep, in this project it is definitely confirmed that there were only seven compulsory courses. From then on the biomechanics course has become a dispensable one. The two rises and two falls" were emerged in the early 90's. The office of National Physical Education Board published *Teaching Programme of Common University's PE Major*, which established sport biomechanics course as a compulsory course again. However, owing to several reasons, some schools did not include this course as a compulsory course and some PE majors even would not take the course as an elective, As a result, the course could not be offered in some colleges due to low enrolment. "The third rise and fall": In 2000, the Physical Strategy Development Programmer listed sport biomechanics as a pointed course. After that, however, for some subjective and objective reasons, sport biomechanics course was into the "third fall". According to the document of Ministry of

Education. In 2003, the National Education Ministry newly published *The Course Project of the Colleges' PE Major in the Whole Country*, in which the human physical courses are just decided to involve sport physiology, sport anatomy, sport hygienics, and sport biochemistry courses, except for sport biomechanics course. This means that sport biomechanics was excluded from compulsory courses again.

DISCUSSION:

The evolutionary reason of the sport biomechanics course's position in the teaching program: First, Sport biomechanics, as a formal course, develops just after the 60's. In China, owing to the 10-year political turmoil, the actual development of sport biomechanics was from the early 80's. During that time, sports biomechanics did not fulfill the function of this course in training PE teachers of primary and middle schools. Second, the teachers' understanding of this course is not thorough and the teaching method is inadequate. Some biomechanics teachers were graduated from the physic department, who change this course into a mechanics, and make it has nothing to do with the sport. Because teachers did not understand the teaching goal thoroughly, and the teaching method was not optimal, this course could not be developed smoothly.

Third, educators in sports biomechanics have always emphasized more on the scientific research and neglected its basic function of teaching. This was a hindrance to the comprehensive development of sport biomechanics in China. The development of sport biomechanics should not focus only on "climbing high" in scientific research, but also "getting down" to grass root level of teaching sports biomechanics. The success in both aspects can make the field of sports biomechanics to develop healthily and smoothly.

According to the above analysis, the best way of changing the present condition is to revise the course content, revamp teaching methods, and improve teachers' quality. We should establish reasonable teaching system mode, follow the teaching principle of integrating theory with practice, and increase the teacher's teaching level. We have proposed a course content for sport biomechanics according to the directions gathered from experts interviews. (Figure 1).

In the process of teaching we must follow the teaching principle of integrating theory with practice. Sport biomechanics is not a pure mechanics. If the course is taught as a mechanics, it will cause students to lose their interests. When teaching the mechanics principle, it must be illustrated with athletic examples. Because athletics department students' sport experiences abundant relatively, combining actual sport to teach the principle of biomechanics not only can promote the students' comprehension of the principles, but also increase students' interests of studying sport biomechanics.

As a sport biomechanics teacher, a reasonable knowledge structure should be included. First, grasping the knowledge of computer applications and network searching, and necessary English skills. As a sport biomechanics teacher, he/she must always seek the knowledge of this course in the net, grasping the latest information. One can become a better teacher only if he/she can have some proficiencies in computer applications and English skills. Second, one must study further on this course. During the teaching process, teachers must attain the goals of "deep", "wide", and "new", that is to deepen the knowledge of this course; to widen the basic knowledge and general technique of the human science theories (including the sport anatomy, the physiology, the health fitness education, the biomechanics, and the biochemistry) and the sport programs (such as athletics, balls, gymnastics and swimming), and to grasp the new information and research findings related to sports biomechanics. The teachers only build the above knowledge base; he can do the teaching of his course efficiently, and improve teaching quality.

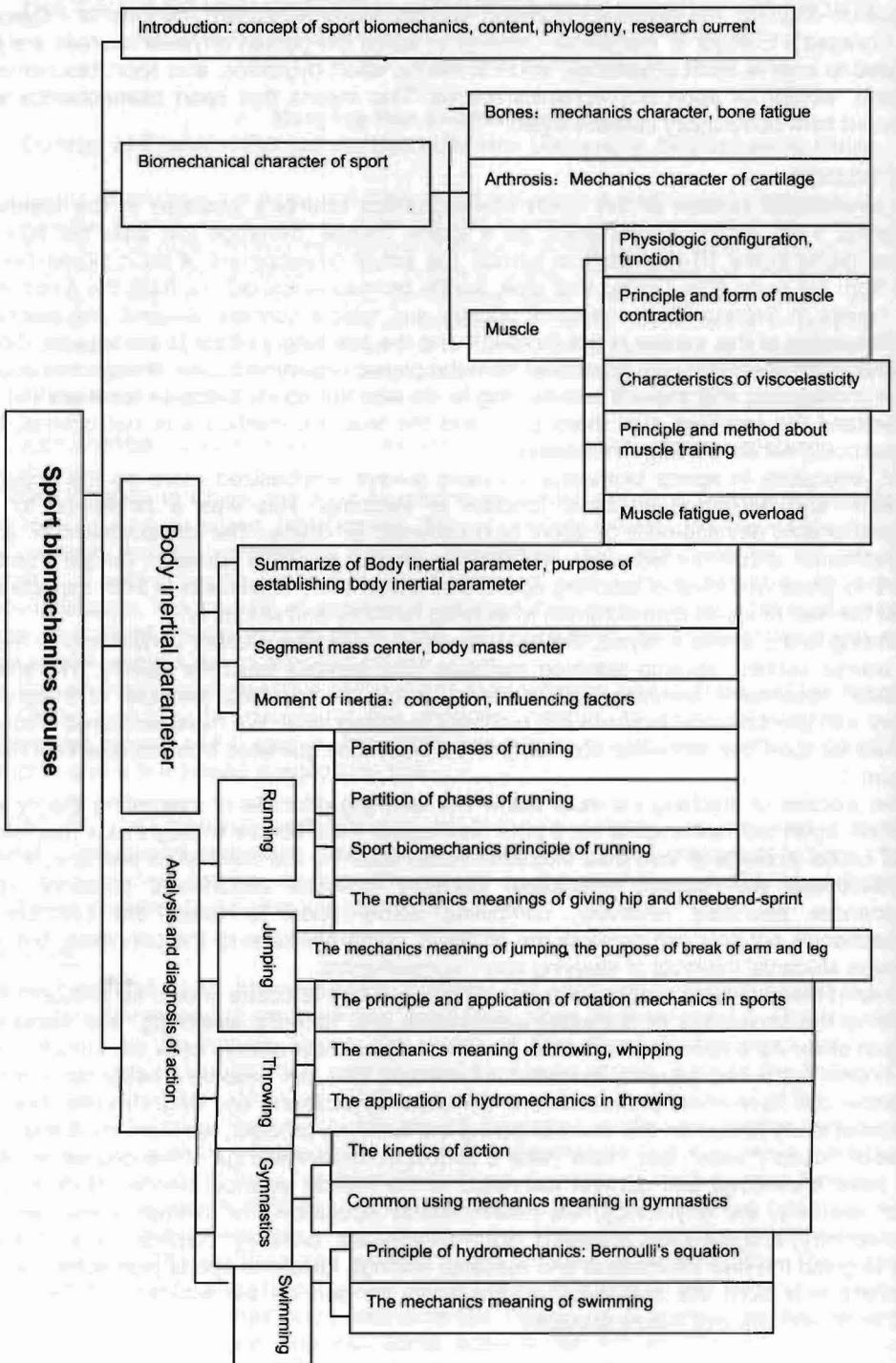


Figure 1 Sport biomechanics course content.

CONCLUSION: To rectify the problems in the teaching of sport biomechanics course in China, we propose that each institute should find its own problems and take efficient measure to solve them.

Sport biomechanics course has a significant role in the process of training PE practitioners. It should be listed as a compulsory course in the curriculum of PE majors.

The pertinent departments of the national high schools' education should affirm and combine resource to revise the sport biomechanics teaching material.

Teachers of sport biomechanics courses and teachers of sports technique should improve their own knowledge base and increase their own quality to adapt to the teaching demands of the new century.

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