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Design and Practice of Paragliding Course in Physical Education Teaching of Chinese Universities

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Abstract. The teaching of physical education curriculum is an important task to train sports talents and promote comprehensive and healthy sports. In this paper, under the situation that paragliding is gradually becoming popular, the training of paragliding professional athletes is chosen as the research theme. By means of questionnaires, expert interviews and data acquisition, the necessity and feasibility of offering paragliding courses in colleges and universities are analyzed. Taking the gliding course of China University of Geosciences (Wuhan) as an example, this paper makes a systematic analysis from the aspects of curriculum design, faculty building, teaching methods and personnel training effect. The results show that the gliding course offered by China University of Geosciences (Wuhan) has made a useful exploration, trained excellent talents and accumulated rich experience. It has academic significance, practical value and reproducibility, and plays an important role in promoting the development of sports in China.

Introduction

Outdoor sports have become a trend, gradually into the public life, including the relatively "small crowd" paragliding in the past. This is an aeronautical sport in which airfoil parachutes are used to take off and soar with air lift [1]. It was invented by a group of aviators who loved parachuting and gliding wings four decades ago and soon became popular in Europe. It was introduced into China in the late 1980s and developed rapidly later. Through years of development and evolution, flight hours and flight distances are constantly refreshed [2]. It embodies a kind of communication between man and nature, and is loved by those who advocate nature. Around the world, paragliding has hundreds of thousands of fans.

Paragliding is mainly downhill with fast descent speed and relatively good safety performance [3]. Obviously, this aerial flight movement has certain technical requirements. Special training is required for a certain period of time. The promotion of activities also depends on a large number of specialized personnel with specific knowledge and special skills. This is the original intention of the paragliding course.

In this paper, the paragliding course offered by China University of Geosciences (Wuhan) is taken as the research object, and the necessity and feasibility of the course are analyzed by means of literature, questionnaire, expert interview, field survey and mathematical statistics. On this basis, the paper explores the knowledge structure, course characteristics, teachers staff, teaching design, the impact of course learning on students, and the social impact of the course [4]. Through summarizing the experience of teaching practice, this paper puts forward a systematic scheme of course construction, which can be used for the construction of paragliding courses in other colleges and universities in China and provide basis and reference for the growth of more paragliding professionals [5].

Characteristics of Paragliding

Paraglider is a typical word compounded by two words “para” and “glider”, which is a special sport with the combination of “parachute “ and “gliding wing”, i.e. an improved high-altitude square umbrella integrated with a performance close to gliding wing [6].

Paraglider sports equipment is a free aircraft, which can take off from mountain slopes, or flying off by traction, without relying on power, using air buoyancy to glide in the air [7].

Considering the structural and its characteristics, paraglider usually consists of airfoil Parachute coat, rope, strap system and control system.

As for the sports mode, paragliders can be roughly divided into four categories: cross-country racing flight, fixed-point landing flight, aerobatic flight and leisure flight.

In terms of flight principle, paraglider generally has no power. Its flight depends on the control of pilots and the aerodynamic characteristics of the atmosphere, besides the special wing shape when the paraglider coat is filled with air.

The operation procedure includes the basic steps of takeoff, steering, climbing, descending and landing.

After about 40 years of development, paragliding, whether considering equipment or technology, has been in a mature and stable stage, becoming a growing and active outdoor sport all over the world [8]. It is generally believed that paragliding brings about a kind of life and attitude. It not only gives you the opportunity to make friends all over the world and bring you closer to different customs and cultures, but also enables you to learn to live calmly with nature, which is a spiritual enjoyment.

Paraglider flight could be regarded as a comprehensive application of multidisciplinary knowledge. Flight safety depends on weather, site, equipment and the pilot himself. Apart from a few extreme sports enthusiasts who use extreme play and seek excitement in paragliding, most people play leisure flight to achieve close contact with nature [9]. Through regular professional learning and accumulation, paragliding may become an outdoor hobby of ordinary people just like skiing, diving and cycling.

Background Analysis of Paragliding Course

The opening of paragliding course in colleges and universities conforms to the trend of social development, and has some scientific, reasonable and advanced characteristics [10].

Analysis of Policy Support

The State General Administration of Sports promulgated the Development Plan of Aeronautical Sports Industry in 2016, which clearly pointed out that it was necessary to build a sound system of Aeronautical Sports Events, rationally develop the airspace resources and grow the air-ground economy. The policy proposes that by 2020, a reasonable layout, perfect functions and complete categories of aviation sports industry system will be initially constructed. The aviation industry pattern featuring safety norms, effective management, wide participation and civil-military integration has basically been formed. It has been planned to establish 2000 aviation camps and 100 aviation sports clubs of various types, and provide 20 million people with the opportunity to participate in aviation sports. Constantly enriching the supply of products, expanding consumption demand and promoting the sustained and rapid growth of industrial scale have become an important force in promoting the development of sports industry and economic and social forces.

The first time that paragliding was included in the Asian Games in Jakarta in 2018 is a kind of affirmation of paragliding and a great influence of paragliding in traditional sports circles.

Analysis of Development Trend

Paragliding is carried out in colleges and universities to make up for the vacancies in this field, strengthen the teaching, promotion, management and standardization of paragliding in China, and push forward the development of paragliding in China [11].

Physical education is the development direction of sports curriculum, the goal of which presents a pluralistic trend, and the guiding ideology of physical education teaching in colleges and universities appears a comprehensive trend [12]. The selection of textbook content should follow the principle of "easy to learn, easy to use, less and more refined". The value characteristics of gliding parachute, such as its simplicity, novelty and stimulation, determine that it conforms to the

development trend of physical education in colleges and universities [13]. The setting of paragliding courses in universities can furtherance the advancement of paragliding in China and raise the status of China in this sport.

Analysis of Talent Demand

Many paragliding events at home and abroad have brought inspiration and influence, but also highlighted the lack of professional coaches. At present, there are 9 135 athletes with paragliding certificates in China. Compared with Europe, and South Korea, Japan and Taiwan Province of China in Asia, the number of participants is quite small.

When the number of people participating in paragliding is growing up and related events are held much more frequently, colleges and universities as talent training institutions need to take the lead in the field of paragliding and promote the introduction of paragliding into colleges and universities. It is as necessary as outdoor projects such as mountain climbing, rock climbing, crossing and field survival, which are widely carried out in many colleges and universities. The course of paragliding is evidently useful to cultivate potential sports population, discover sports talents, train a group of qualified paragliding coaches who have received higher education, and give impetus to the expanding and popularization of this sport.

Design of Paragliding Course

Course Structure System Design

Reasonable curriculum structure is the guarantee of teaching implementation and the effect. It is significant to incorporate purposeful, planned and organized extracurricular physical exercise, afterschool (social, field) activities and sports training into the physical education curriculum so as to form a sound structure of the course with organic links inside and outside the campus [14]. The design of curriculum system, content and assessment method is shown in Fig. 1.

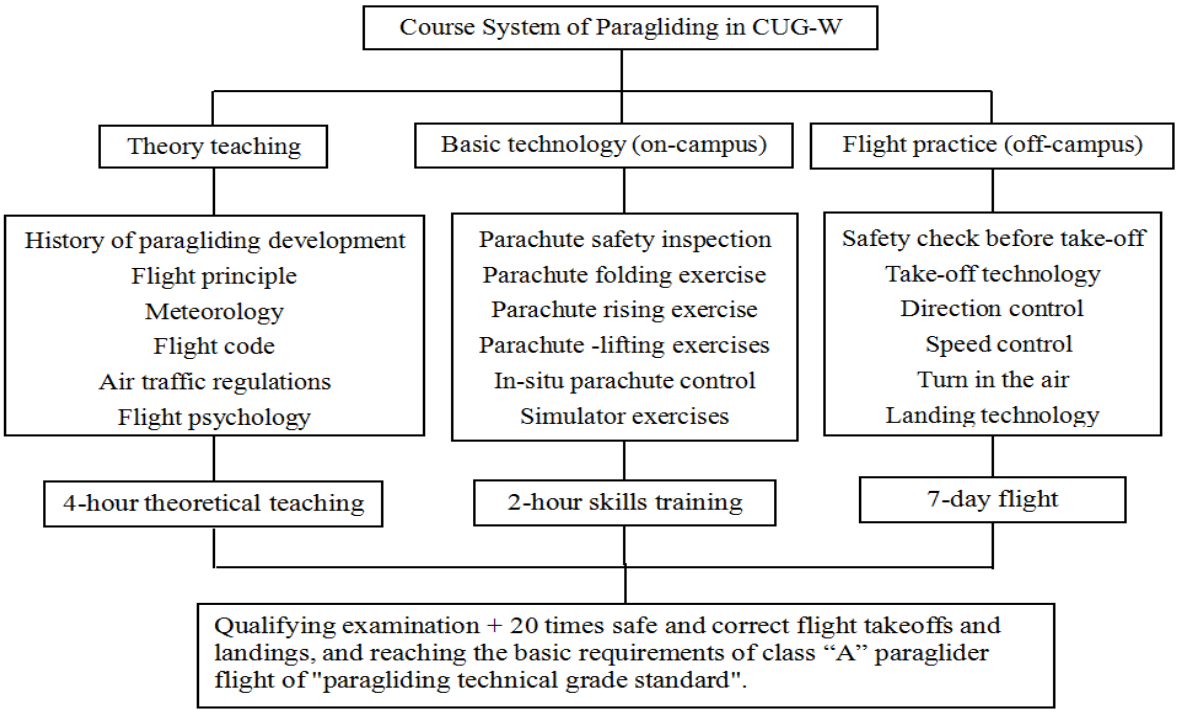

Figure 1. Composition of Paragliding Course in China University of Geosciences.

Building of Teaching body

The teaching of the course needs some high qualified teachers. The composition of teachers’ team is a great job which focuses on the teaching ability, skills and experience of the staff [15]. It is also a matter of great account to keep the complementarily of the teachers and to make an excellent,

harmonious and equal relationship between them, so as to make each team member play his or her role to the maximum extent.

At present, the paragliding course of China University of Geosciences (Wuhan) is equipped with three professional teachers, two teaching assistants and four graduate assistants [16]. In order to ensure that the paragliding course has strong teachers to provide technical, theoretical and teaching support, after many investigations and demonstrations, decided to take external coaches as visiting professors and coaches in the early stage of teaching, and self-cultivated teachers and graduate assistants in the transitional period. Details of teachers team composing are shown in Table 1.

Table 1. Teachers of Paragliding Course.

Source of Teachers	Title	Number	Flight Certificate Level	Responsibilities
CUG-W teacher	A.P.	1 人	C	Head and coach of paragliding project
External experts	Guest Professor	1 人	Junior coach	Head coach, technical and theoretical guidance
External coach	Full time assistant	1 人	C	Coach, assistant paraglider Teaching
CUG-W teacher	assistant teacher	2 人	B	Assisted Paragliding Teaching and Training
Graduate student of CUG-W	graduate assistant	4 人	B(2); C(2)	Assisted Paragliding Teaching and Training

Design of Teaching Method

The teaching of the course adopts the method of combining theory with practice organically [17]. The theory course uses multimedia and teaching video materials to teach, usually in the classroom, which mainly involves the origin and development of paragliding, flight principles, meteorology, selection and observation of flight sites, identification of risk factors, relevant management laws and regulations, flight codes, air traffic rules and so on. Flight practice training is usually arranged on weekends or holidays, and suitable venues are selected and conducted under the guidance of professionals.

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Effect Analysis of Paragliding Course

The paragliding course in Physical Education College of China University of Geosciences (Wuhan) has been set up for more than five years, and a mature teaching system been formed, which involves aerodynamics, meteorology, thermodynamics and geology [19]. The training of good flying ability requires the integration of multi-disciplinary knowledge, as well as team cooperation and self-restraint ability, which is of great help to improve students' comprehensive knowledge and ability.

Effect of Talents Training

China University of Geosciences (Wuhan) opened the paragliding course in 2013, creating the only university paragliding team in China. So far, 234 undergraduate paragliders have been trained, including 30 master paragliders. They have participated in various major domestic competitions for many times, and have aroused great concern of the society.

With the accumulation of teaching experience and the improvement of technical level, the school has constructed a unique paragliding teaching system, which has called strong repercussions in China [20]. At the same time, it has created excellent teaching achievements of zero accidents in teaching since the beginning of five years. It has scrape up rich teaching experience and replicable teaching mode, and has become the leader of Chinese universities in this course construction.

Evaluation of Students

We surveyed 97 students to find out their feelings about paragliding courses compared with other physical education courses. Table 2 shows some summarized characteristics of the course from six aspects and the number of students accepting those various features.

Table 2. Characteristic of the Course.

Characteristics	Number	%
novel	85	88.54%
Amusing	66	68.75%
experiencing	83	86.46%
Learning	54	56.25%
Physical fitness	22	22.92%
Stimulating	51	53.13%
Others	0	0.00%

According to the data in the table 2, 56.25% of the students who participated in the course thought that they could learn a lot of comprehensive knowledge in the course. Students generally believe that paragliding is fun and they are eager to participate in this sport project.

Table 3. The Attraction of Paragliding Sport.

Influences on Students	Number	%
Self-confidence	77	77.78%
Overcome fear	72	72.73%
Strong physique	21	21.21%
Optimistic and positive	56	56.57%
Close to Nature	79	79.80%
Pursuit of freedom	59	59.60%
Realize dreams	21	21.21%
Love sports	26	26.26%
Hobby	17	17.17%
Others	0	0.00%

As shown in table 3, almost all the students who have taken part in paragliding courses agree that paragliding has a positive impact on their mental health. They mostly approve this course of "getting close to nature" (79%), followed by "self-confidence", "overcoming fear" and "pursuing freedom" (77%, 72% and 59% respectively).

In a wider survey, more than 100 students are invited to choose their most favorite sports from

lots of items, including climbing, paragliding, rock climbing, diving, surfing, three major balls (basketball, football, volleyball, badminton, tennis and table tennis) and many other sports, 86% of which took fancy to paragliding. This is the largest percentage of the selection, followed by diving. (63%) and climbing (61%). It could be seen that paragliding course is more popular among college students investigated.

Paragliding is a sport that is easy to be obsessed with. In colleges and universities, paragliding courses are offered and the equipments are provided so that students who are not financially able to purchase equipment could have access to and learn paragliding techniques in advance, so as to develop a strong ability of safe flight. After graduation, those students have the ability to buy their own flying equipment and re-invest in paragliding as a lifelong sport and leisure and recreational activities on weekends or holidays when economic conditions permit.

More importantly, they can be used as sparks to ignite the flame of paragliding and become supporters, promoters and future guides of the sport.

Conclusion

The opening of paragliding courses in colleges and universities could attract more college students to participate in the sport, popularize paragliding related knowledge, amplify the sports population, and lead more people to join the paragliding sport.

Paragliding Course can meet the needs of College Students

With the growing in quantities of statutory holidays, the public's interest in fitness has increased remarkably, and the demand for new entertainment content has also aggrandized. Traditional competitive sports and leisure activities can no longer meet the needs of contemporary college students and the general public [21]. As a new fashionable leisure sport, paragliding entering colleges and universities is bound to be popular with college students, which make up for the shortcomings of traditional sports and enrich their entertainment, sports and life.

Paragliding Course Can Promote the Development of Sports

Paragliding has been carried out in China for more than 30 years. The number of people participating in paragliding has gradually increased, and the technical level of paragliding has also been greatly improved and matured. China Aviation Association (CAA) has won awards repeatedly in all kinds of paragliding competitions at home and abroad for China National Paragliding Team selected by non-governmental organizations.

By taking the paragliding course of China University of Geosciences (Wuhan) as an example, it can be proved that it is feasible and effective to set up paragliding course in colleges and universities. The reason is that it meets the requirements of the reform of college physical education curriculum content, promotes the systematic study of domestic paragliding course teaching, its teaching function has a far-reaching and comprehensive impact on students, and is capable to cultivate potential paragliding population and high-quality sports talents for paragliding in China, so as to meet the needs of the society.

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