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Analysis and construction of Dance system for strength training

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ABSTRACT

Dance is to technology as the core, power quality assurance skill showing category sports. Strength quality is the physical construction of dance sport guarantee is beautiful, complete set of action is the material foundation, quality is the core of the Dance physical quality. The power of good quality can not only avoid the dancers were injured in the movement, the movement to extend the life, but also can promote the dancer faster learning, to master the correct dance techniques and bring into full play the technical level in the game. Dance in sports training, strength training, whether it should focus on the training of high level athletes, or general player. This paper, through access to a large number of dance sports books and special strength quality training content and other related research results and literature material, on the domestic and foreign research present situation of Dance training has an overall understanding of. Especially in reference to China's Dance college teaching syllabus and dance training details, and combining the research of Dance most, certain induction, summary and analysis.

KEYWORDS

Power quality; Dance; Theory; The teaching and training; Research and analysis.

INTRODUCTION

Dancing is a new sports project collection of sports and dance art in a body[1]. It has a dual nature of sport and art, the rich flavor of the times, is a country, nation and individual emotion world language and body language, can not be substituted by any sport and art form[2]. Has a long history of it, and to the irresistible charm shocked the entire world, twentieth Century 80's dance sport was introduced to China, in 1987[3] the State Education Commission and the Dance column for the college physical education content, from the beginning of its in the popularization and promotion of China's colleges and universities, into another form and contents involved in sports activities for college students. In the Dance sports rapid development today, the sports colleges and universities Dance students as the sustained and healthy development of Dance movement impetus, grasp the project features, explore and study the characteristic of special strength, construction of the sports colleges and universities Dance students of special strength training content, for special students targeted training, and comprehensively improve the special student athletics ability[4,5,6].

In the dance training in the teaching process, there are many students softness is particularly good, stand in the rod to do what you want, but from the rod stand instability, always floated here and there, at the foot of no root[7]. As a teaching phenomenon, it is a question. When the dancers stood on the floor, most should force should be said to be foot. The foot is very important for a dancer, it is the foundation of all the movements of the dancers, is the basis for extending the action[8]. To support the body, feet consciously must hard step on to the floor, produce a kind of compression force on the floor. We know that the law of gravity that any two material particles are attracted to each other, the quality of the product of gravitational size with two particles is proportional to, with their distance is inversely proportional to the square[9,10]. Therefore, we can say that the interaction between human and the earth produced gravity. Gravity is the force of gravity of human being. From a biomechanical perspective, the human body is in static state, gravity is equal to the weight, called the static ground reaction force; when the body is in motion, the situation is different, this is because the human body accelerated motion, generated power supporting reaction[11].

In this paper, the significance of the research in theory, this research uses the science of sports training, biomechanics and other knowledge, combined with the technical characteristics of dance, for the university dance in China (in) the theoretical basis of special strength training content of constructing are analyzed in detail, for the Dance (specialized) provides a theoretical guidance for strength training content reasonable selection and scientific arrangement, further enrich the theory system of Dance of strength training in china. In practice, the construction of special strength training content, training practice can effectively guide the teachers or coaches, conducive to the teacher or coach correction of strength training content and rational planning, overcome the blindness in training and adjust plan in a timely manner, so that the strength training and technical training combine to ensure the physical quality and technology the level of increase stability, has important practical significance for improving our country Dance strength training scientific level and sports result.

APPLICATION OF SPORTS BIOMECHANICS IN DANCE

The theoretical basis of the content system of power quality

From a biomechanical perspective:

$$H = V_0^2 / 2g \quad (1)$$

H is the height of vertical jump, V0 as the initial flight velocity, G is the acceleration of gravity[12]. Then the formula shows that the vertical jump height depends on the movement from the ground to the jumping speed V_0.

According to the theorem of momentum:

$$V_0 = \int F(t)dt / mF \quad (2)$$

M is a human quality, range of integration for the body start to off moment). This formula indicates, V0 depending on impulse, impulse is the cumulative force and force time product. The maximum height by the two formula is not hard to derive the center of gravity rises.

A weight of W movement, by instrument jumping up and down, if the method of bending the legs, in the process, by 2G upward acceleration and reach the stationary, begging to the average force during ground on it. Solution: set supporting reaction is N, in the vertical direction according to Newton into the law,

N - W=ma **(3)**

Wherein, m=W/g, a=2g: N=3W **(4)**

The theorem of momentum can be derived by Newton's second law:

$$F = ma = m(V_2 - V_1) / (t_2 - t_1) \quad (5)$$

$$F(t_2 - t_1) = mV_2 - mV_1 \quad (6)$$

$$\Delta F * \Delta t = mV_t - mV_0 \quad (7)$$

The ground effect on the movement of the force is 3 times his weight. If in a period, his legs bent, would be beneficial to reduce the impact of ground of its force, this makes a lot of movement has been emphasized in the mechanical buffer action reason.

Research on present situation of Dance special strength training

Since the reform and open policy, the Dance in the vigorous development in our country, in the development of colleges and universities also steadily.1987 National Commission for College Physical Education Majors in Dance lesson, then again in public physical education of University in additional Dance elective course.

At present, more and more attention to the development of college Dance, in 2001 the State Sports General Administration organized the first national sports colleges and universities Dance competition, and in 2005 organized the first/Chinese College Students Dance (ballroom) championship 0, these games in the large number of categories in the coverage of all two classes of ten, laid a solid foundation for the future development of this sport.

DANCE SPORTS COLLEGES AND UNIVERSITIES (SPECIALIZED) CURRICULUM

Proportion of technology, quality, theory

The content of the course is a complete teaching system between the various systems are not completely independent, but interrelated, interaction, is various in different teaching stages when part of the teaching of different emphasis. At present the content of the course of Dance in Colleges and

universities in China are mainly composed of three parts: theory, technology, practice. The theoretical knowledge throughout the special technology teaching, help students to put theoretical knowledge into easy perception and understanding of knowledge. And the teaching content technology part is action of practice, is the key to grasp the object of students, is an important part of Dance teaching. Finally have the technology and theory support, students can better into the practice part of learning, to get more extensive and profound knowledge of dance. Therefore, technology, theory and practice three parts complement each other.

According to the Dance sports colleges and universities (special) syllabus summed it up:

TABLE 1: Technology class accounted for the total proportion of class hour

Content of courses	The theoretical part (class)	The technical part (class)	The proportion
Beijing Sport University	64	672	91.3%
Wuhan Sports University	24	712	96.7%
Harbin Institute of Physical Education	72	664	90.2%
Chengdu Sport University	16	640	97.5%
Guangzhou Sport University	16	720	97.82%

Through the technique of total proportion of class hour table analysis, China's college Dance teaching includes two parts of theory and technology, the technology of the proportion accounted for an average of 94.7% of the total teaching hours is the emphasis of teaching.

Analysis of setting technical content

Part of the course of Dance technique is the main content: (ballet, body shape), grade movements and routines, race or routine physical training. Through the analysis, the college sports college Dance teaching syllabus found that proportion of Sports Art Dance technology learning basic movements, dance technology portfolio accounted for a larger study, and to the Dance physical quality, physical ability, special ability, special strength quality training is relatively less. The main reason caused this phenomenon is: professional Dance at present, most of the students did not pass system of Dance training, in the professional learning, spend a lot of time for class routines and synchronized routine exercises. Dance learning, must spend a lot of time to conduct a special form, the special strength quality and basic action practice techniques for technology to further enhance to lay a good foundation.

The questionnaire is designed according to the "important" and "more important", "general", "less important" and "not important" respectively by 5, 4, 3, 2, 1 points, and finally by calculating the mean scores for each content.

TABLE 2: Teaching content part of technical importance degree

Content of courses	Very important	More important	General	Less important	Not important	Mean
Form	13.5	64.5	22	0	0	3.92
The basic action	70	30	0	0	0	4.81
The technical level	51.7	48.3	0	0	0	4.51
Contest or routine	34.5	51.7	13.8	0	0	4.20
Flexible	33.5	35.5	26.6	2.4	0	4.32
Speed	48.7	32.5	17.1	1.7	0	4.25
Endurance	50.2	48.3	1.5	0	0	4.17

Characteristics of mechanics and dynamics structure

Dance belongs to the skill dorminantly difficulty, beauty, the performance of event group, is a sport with technology as the core. Dance including modern dance, Latin dance two categories. Modern

dance the waltz, tango, including Vienna waltz, Foxtrot, quickstep five individual; Latin dance including rumba, Cha, cowboy, samba, bull five single. Each individual has a different technical characteristics; for special Dance techniques, and can be divided into the Latin dance contestant, modern dancer, ten all-around player, single player etc. Development of physical quality of the ultimate aim is to serve the special ability and technology action. Visible, characteristics and technical action project is the development of the physical quality oriented. Accurately grasp the needs of each individual and different types of technical action of special strength quality, is the key to scientific evaluation and diagnosis of Dance Players special strength quality.

EXPERIMENTAL RESULTS

Analysis of sports college Dance training content

According to the changes of knee joint angle in operation process, the whole action process is divided into the following phases: squat stage, stretching phase, flight phase and the landing buffer, four stage. Squat stage, is refers to from the ready action began to squat to the knee bend reaches the maximum, at the same time heel off the ground process (Figure 1 A - B section).

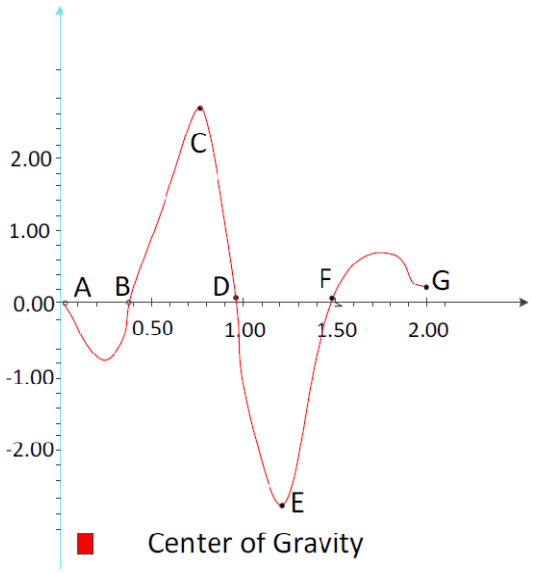

Figure 1: The knee joint angle change curve

Stretching stage, refers to the bending angle of the knee joint by maximum began to leg push off the ground in an instant so far (Figure 2 B - C section).

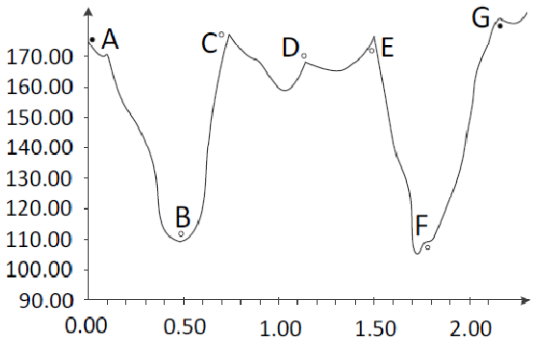

Figure 2: The change of gravity curve

Landing stage, is refers to the body by the air drop foot contact with the ground began to squat, stand back buffer preparation position. That is, from the sole of your foot just touch the ground began to total body center of gravity to stop moving so far (E in Figure 3 - F - G).

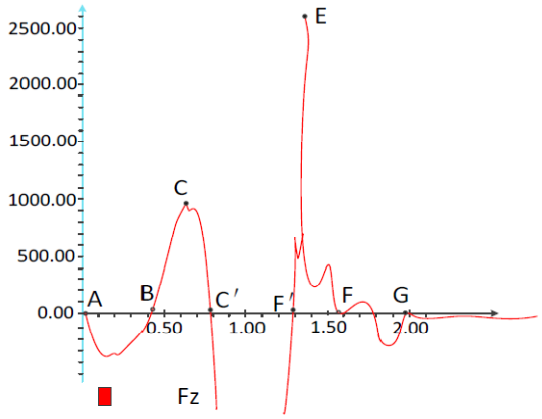

Figure 3: The action in the process of force curve

Study on the construction of special strength quality training

(1) Consistent with the characteristics of the special force. Dance training methods and project and try to keep the same dance movements, need what muscle, practicing what muscle, so as to achieve better results.

(2) Organize training continuously, step by step. The dancers only long and ongoing training, it is possible to climb the peak of sports; at the same time, must be gradual, rather than the abrupt increase exercise load, in order to achieve the ideal training effect.

(3) The muscle strength and muscle stretching exercises must be combined with. The muscles in the strength exercises, muscle fiber decreased, if the strength exercises to strengthen the stretching exercises, can lengthen the muscle fiber, helps to improve the speed and strength quality, will enhance the dance motion coherence and increase the range of motion.

(4) The distinction, in the process of training the dancers training, according to the characteristics of personal characteristics and project dancer, to determine the training task, content, means and methods, to achieve good training effect.

CONCLUSIONS

Along with raising the level of the students in different semesters dance, focus and focus of the special training content should also be adjusted: should improve the basic technical movements, body shape, physical quality, physical ability, creation ability training. Dance action request on bodies mainly include: various parts of body posture and muscle movements, the body center of gravity control of fast rhythm of the transfer and conversion, the center of gravity of the parabolic motion and rotation of the body technology, hip and waist and abdomen torsion pendulum technique, trunk muscles against each other and relatively tight, balanced, stable technology the rhythm, shoulder and arm technology, knee flexion and extension spring technology. Special strength quality: power quality, the overall physical control of power quality, the stability of the core strength, physical durability strength, leg speed strength qualities, waist static strength quality of support ankle.

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