

# Sustainable Development of Subjects in Sports Institutes and Universities Based on Niche Theory

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**Abstract.** Sports institutes and universities are essential in the educational ecosystem. This paper explores the sustainable development strategies of institutes and universities of sports, and seeks the fundamental paths of development and transition of the subjects. Based on the basic theory of niche, it expounds the connotation and formation mechanism of niche in sports institutes and universities of, constructs the strategies of niche development, provides strategic choices for niche development of the subject of physical education, and provides new ideas for sustainable development of sports institutes and universities.

## Introduction

With the deepening of the reform of higher education management system in China, sports institutes and universities begin to change from development focusing on speed and scope to connotation, from focusing on numbers of students to quality of schools. Sports institutes and universities have trained a large number of sports talents for social development, and shouldered the important task of developing China into a nation strong in sports. Exploring the sustainable development of the subject of physical education from the perspective of niche, explaining the direction of development of the specialty by means of appropriateness and universal selection, and exploring the influential factors and its niche development strategy play an important role in the comprehensive, coordinated and sustainable ecological development of the subject physical education.

## Niche of the Subject in Sports Institutes and Universities

Niche of the subject of sports institutes and universities refers to the unique competitive advantage, future development and special functional status of the subject formed by the interaction between the special training and the ecological environment through the interaction of the special training and the ecological environment in the whole social ecological environment and the special ecological environment of higher education. Researches on educational ecology and sports ecology have provided guidance for the study of ecological sustainable development of the subjects. The niche of the subjects of physical education can reflect the ecological factors of the specialty from the micro-subject ecological environment, the ecological advantages and the ecological status on all levels of the subject, the special role of each subject in its ecological environment.

The effective utilization of sports resources and rational transformation of various resources and energies have exactly formed the special features of subject of physical education in institutes and universities. At present, the world first-class, Asian first-class and domestic first-class sports institutes and universities can only display their goals and orientation, but cannot really reflect their ecological status and space. The establishment of niche of the subject of physical education is closely related to the maintenance and expansion of its niche space. According to this theoretical hypothesis, the essence of the rapid growth and sustainable development of subjects in sports institutes and universities in the future can be understood as the development process of ecological

strategic choice, ecological expansion and transition of their own niche and expansion of their own ecological space.

Niche of the subject of physical education is complementary and cooperative in nature. A certain shared ecosystem can provide a new living space and development platform for material, energy and information mobility, maintaining a benign and orderly exchange, thereby reducing the negative effects of ecology and the professional function barriers among them. The symbiotic relationship of sports niche of the subjects will also have a correlation effect on other niche of the subjects in the ecological environment, and will also react on the niche of the subjects of institutes and universities. Professional alliances, professional sharing platforms and national quality demonstration courses provide a broad space and time continuity for the expansion of niche of the subject, and provide more material flow, energy sources and rapid transformation of information for the symbiotic strategy.

### **Strategic Choice of Developing Niche of Subjects in Sports Institutes and Universities**

The strategic choice of developing niche of the subject is that each subject uses various strategies to consolidate the basic niche of itself according to its own objective conditions and corresponding niche, and to promote the benign development of niche of the subject. Niche theory points out the relationship between subject and external ecological environment in sports institutes and universities is dynamic. Its strategic development goal and ecological orientation need to keep pace with the times and adjust dynamically. If institutes and universities cannot control the quantity and quality of development of the subjects, if they do not conduct market research on the spatial distribution of talents, and do not make overall planning, the result is that there will be shortage of supply and demand for some subjects, and no market demand for some subjects at all.

### **Suitable Choice of Niche of the Subject Development in Sports Institutes and Universities**

In the achievement of the goal and ideal of niche of the subject of physical education, the practice of “low-level seeking for high position” is not advisable. Some low-level subjects of physical education blindly imitate or copy high-level and high-level subjects. Since 2001, there has been a trend of “merging of institutes and universities”. Sports institutes and universities have undergone a series of adjustments and reorganizations. Only one of the six sports colleges remained affiliated to the State Administration of Sports of China, namely Beijing Sport University. The other sports institutes and universities have adopted the mode of co-management under the central government and local governments, or under the local governments. From the perspective of the “11th Five-Year Development Plan” of the 14 sports institutes and universities, all schools aimed to be the first-class modern sports university (teaching and research type) in China and internationally (world-renowned). However, concerning what the standards were for the first-class sports institutes and universities in China, what indicators and content were for the international well-known sports institutes and universities, what the standards were for modern first-class subject of physical education, there was no and has not been much in-depth research and construction.

The overlap of niche of five sports universities mainly lies in their development goals, school-running orientation, subject settings, and even in the cultivation of talents, school-running mode and many other aspects. In the popularization stage of higher education, sports universities at the same level or at different levels are blindly competing, ignoring their own reality and school-running strength. As a result, some schools pursue to be built into “first-class sports universities” and “high-level sports universities”, presuming that all of them can be first-class. They also want to be universities centered around “teaching and scientific research” or just on “scientific research-oriented” and to be international standard. This unrealistic pursuit and orientation will inevitably lead to convergence of subjects, and the result will only lead to vicious competition, frantic rush for resources and ecological imbalance.

## **Universal Choice of Development of Subjects in Sports Institutes and Universities**

In essence, the development of subjects in sports institutes and universities is a process of interaction between ecological factors and ecological location in the ecological environment. In order to occupy a better niche and more ecological factors, there must be competition and cooperation among the subjects. To some extent, the fierce competition among subjects in sports institutes and universities actually comes from the overlap of niche of the subjects. Each subject will face the opportunities and challenges of the external ecological environment and the competition of subject ecological groups. If the dimension of niche of the subject can be effectively grasped and the measurement of niche of the subject can be obtained, reasonable dimensions of “professional ability, professional environment and professional space” can be built to optimize and innovate the niche with the strategy of niche of the subject.

The survival and development of sports subject are closely related to social ecological environment and educational ecological environment. The strategy of professional development needs to fully consider the ecological balance relationship among stakeholders and the trend of ecological environment change. Compared with other universities or colleges, the professional strategic planning of sports institutes and universities should not only consider their commonness, such as the commonness of physical education subjects, but also study the special features of the subjects and grasp their own unique “ecological environment” and ecological factors, which are the important pillars of forming and influencing the niche of the subject. It is necessary to study the niche and its trend of dynamic change. The niche of the subject of sports institutes and universities can be summarized from three dimensions: environmental dimension, spatial dimension and competence dimension. The three dimensions are highly consistent with the strategic elements such as ecological environment, self-resources and competence of the professional strategic development of sports institutes and universities.

## **Strategies of Sustainable Development of Niche of Subjects in Sports Institutes and Universities**

According to the route of strategy formulation, the niche strategy of sustainable development of sports institutes and universities is designed into the following types: competitive strategy, mobile strategy, symbiotic strategy and collaborative strategy.

### **Competitive Strategy for Sustainable Development of Niche of Subjects in Sports Institutes and Universities**

In ecology, one species may lead to the extinction of another in competition, which is “competition exclusion”. Competition is excluded in the niche of subject of physical education. For example, if the subject of social sports cannot survive for the time being. If there are no new policies and opportunities, it may face the choice of life and death. Professional competition in Sports institutes and universities mainly reflects the efforts of both sides and parties to pursue excellence and always strive for the first under certain rules, which originates from the simple imitation of competition phenomena in the ecology of physical education specialty and education. Professional competitiveness is an unavoidable problem and phenomenon in the development of subject of physical education. The basic status of orderly competitiveness determines the regularity, entertainment and convergence of subject of physical education. It also gives subject of physical education moral rules, economic profits and professional status.

The niche of sports institutes and universities in higher education ecology and sports ecology is their competitiveness. Sports institutes and universities have been fully integrated into the various competitions of educational ecology, social ecology and sports ecology. In order to achieve the ecological survival and good development of subject of physical education in various ecological competitions and cooperation, it is not the high status of schools, but the high professional status. It is necessary to delineate the niche of subject of physical education and build its core

competitiveness and characteristic advantages. It is well known that the factors affecting the niche of the subject of Sports institutes and universities are very complex. The sports ecology, social ecology and educational ecology are undergoing profound changes.

Firstly, the relationship between schools and the government is undergoing further changes. The government's control over establishment of subjects has been transformed into macro-control, thus enabling the survival and development of the subjects to gain more ecological "autonomy". Secondly, the most typical and direct change is that sports talents' job positions are no longer assigned by the government. Instead, they have to do job hunting to start their own business, which fully demonstrates that the fittest can survive better. The actual demand of social ecology for sports talents is quite different from the demand of talents trained by various subjects in sports institutes and universities, and the ecosystem cannot match each other. Thirdly, the ecological relationship between subjects of physical education is unbalanced and overlapping. Fourthly, problems concern the overlapping and interlacing relationship among homogeneous subjects in the sports ecosystem. The development goals, professional management and curriculum establishment of sports subjects are similar or unclear, the standards and levels of training talents are simple and repetitive. Eco-space and niche are open, self-governing but waste at the low end.

### **The Mobile Strategy of Sustainable Development of Niche of Subject in Sports Institutes and Universities**

There is no doubt that too much overlapping of niche of the subjects will lead to fierce competition, and the degree of the competition is mainly determined by the niche of the subject and its relationship. Under the pressure of competitive ecological environment, after appropriate selection and reasonable evolution, it adapts to a variety of different ecological education environment and social ecological environment, differentiates into many different characteristics and brand subjects, and achieves the coexistence of subjects in the ecological environment through the separation of niche. The two closely related sports subjects in different regions have similar characteristic values, but the separation of space weakens the competition. In the same region, because of the fierce competition, the difference of their characteristics must become obvious and obvious niche goals should be separated.

According to the basic principle of separation of niche of the subjects, similar subjects should avoid simple overlap of niches, they should have their own subjects with characteristics and competitiveness, avoid ecological internal friction and weaken competition with the same region, and realize the ecological environment of the same region so as to ensure reasonable distribution, regulation and control of the same region, the same niche of the subject coexistence and coordinated development. Furthermore, the niche of the subject should be adjusted dynamically in time to effectively ensure the sustainable development of the subject. There is no doubt that the niche goal among the five sports institutes and universities is separated. The goals of the five sports universities jointly built by the General Administration of Sport and the local government are to become higher-level sports universities through more solid niche for expanding the niche of subject and education. The development of subjects should not only consolidate the existing niche, but also constantly create a new niche.

### **Inevitable Choice of Symbiosis Strategy for Sustainable Development of Niche of Subjects in Sports Institutes and Universities**

The symbiotic strategy of sustainable development of niche of the subject is benign cooperation and resource sharing among different subjects. It strives to achieve the cooperation and exchange of resources regeneration, innovation and core information, professional technology and professional culture in order to enhance the core competitiveness of regional professional groups as a whole, and to gain more competitive advantages such as space and environment, resources and energy. Firstly, the symbiosis strategy means that homogeneous symbiosis strategy, the same level institutes and universities, the same type of subject of physical education take the initiative to adopt mutually beneficial cooperation mode, try to avoid similarities and overlaps. Secondly, heterogeneous symbiosis strategy means that for different types, different levels of subject, teaching co-modeling

mode and professional ability, the niche is different. Therefore, cross-regional aids should be given to specific schools, specific subjects, and special groups of people. Each subject should locate the relative position in the educational ecosystem and form a complementary relationship. The laws of sustainable development and evolution of professional strategies in sports institutes and universities should be followed, cooperation should be made, systematic understanding of the external ecological environment should be improved, direct confrontation or simple imitation with competitors should be avoided, living space of sports subjects should be expanded in order to achieve the win-win goal of complementary subject advantages and resource sharing.

### **Sustainable Development Strategy of Professional Groups in Sports Institutes and Universities**

In the fierce competition, each specialty has chosen its own niche, strengthened the joint development and synergistic development, thus improving the core competitiveness of the subject cluster, and also strengthened the stability and innovation of the subject cluster. Sports professional cluster is the result of co-evolution. It constructs a mechanism of co-evolution, which can realize the innovation of professional value and the co-evolution of value subjects (schools, society, competitors, subjects, etc.). In the co-evolution of mutually beneficial cooperation, cooperation is emphasized. Beijing Sport University and Wuhan Sports University jointly run schools. They have different ecological objectives and niches. Therefore, they can cooperate and coordinate with each other to achieve win-win cooperation and complementary advantages. Universities at the same level determine their own development orientation according to their own actual situation to be better, conducive to promoting the coordinated development of the subjects. The aim of implementing the co-evolution strategy of subject of niche is to ensure the stable development of subject of physical education after clustering.

### **Conclusion**

This paper puts forward countermeasures for suitability and applicability of ecological setting of subject of physical education from the perspective of niche development of subject of physical education, and establishes niche change, niche dimension and ecological strategic choice. From the perspective of ecology, it explores the realization of ecological sustainable development of subject of physical education, and constructs the strategic thinking of ecological development of subject of physical education, integrating competitive strategy, mobile strategy, symbiotic strategy and collaborative strategy to promote the ecological sustainable development of subject of physical education.

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