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Statistical analysis-based local college stadium construction necessity study-take huanggang normal university as an example

Xuefeng Cao, Xingrong Sun*

Mathematics and Physics, Huanggang Normal University, Huangzhou 438000, Hubei, (CHINA)

ABSTRACT

The paper firstly uses documents literature to rough understand Chinese stadium status and universities stadium development trend, applies descriptive research method to illustrate Huanggang Normal University existing stadium status. Then combine with Huanggang Normal University stadium overall matching status to make comparison, use questionnaire survey and mathematical statistics, through researching, statistics and analysis of Huanggang Normal University students' stadium utilization basic situations, students objective evaluation on Huanggang Normal University stadium and Huanggang Normal University students sports participation constraint factors these three aspects, it researches on Huanggang Normal University stadium construction necessity.

KEYWORDS

Stadium; Local colleges; Evaluation indicator; Fitness services; Physiological indicators.



INTRODUCTION

With opening-up and reform going further deeper, domestic economic rapidly growth, national input on advanced education has obviously increased; it let universities sports to rapidly develop. University stadium is an important indicators to measure universities physical education, its function not only is required to meet school sports education, sports events undertaking, but also it should provide social services for mass sports activities development. In Chinese provincial universities, generally they have their own featured, various forms and complete functions multiple functional stadiums, but in some local colleges, due to some reasons, it just has small type indoor sports training venues, or under building preparation or still just stay at planning chart and so on, which seriously constraints universities physical education, limits students' all-around development in morality, intelligence and physique. Huanggang Normal University locates in Huanggang of Hubei province, is a full-time local undergraduate university, it sets physical education major and social physical institution major, totally around thousand people, the same as many local universities in the country, multifunctional stadium is under building. In the following, on the researching basis of statistics, take Huanggang Normal University as an example to analyze local colleges' stadium construction necessity.

China put emphasis on colleges' physical education; it published multiple relative regulations in different occasions and different periods. In 'Teaching conditions and utilization' of "General institutes of higher learning undergraduate teaching work level evaluation indicator grades criteria and connotations" such first grade evaluation indicator, requests on 'Playground area and sports facility' is, "With playgrounds; with special facilities; playground area per student ≥ 3 square meters; facilities are basic completely". Ministry of education issued "General institutes of higher learning stadium facilities, apparatus equipping catalogue" in August, 2004, it regulates each kind of university students occupied sports site area should arrive at 4.7 square meters/people in outdoors, and 0.3 square meters/people in indoors stadium, and make following regulations on different scales colleges' amount and area of stadiums that they should equip: Outdoor site basically equips area per student $4.7m^2$, specific requests are as TABLE 1.

TABLE 1: National regulated outdoor site facility table

School scale	10000-20000 people	Request
400m standard athletic field (including football field)	2 pieces	a) plastic playground and corresponding natural grass or synthetic turf football field
Basketball court, volleyball court, tennis court	Above 60 blocks	b) through-hardening or greening or 100% hardening, tennis court 50% plastic
25*50m standard outdoor swimming pool	1 piece	c) possess completely a set of clothes changing and washing facility for student

Indoor site basic equips area per student $0.3m^2$, specific requests are as TABLE 2 shows.

TABLE 2 : National regulated indoor site facility table

Stadium facility	10000— 20000 people	Request
a) Playground	1 block	a) Ground is smooth soil
b) Comprehensive multifunctional stadium	1 piece	b) Seats are no less than 3000 pieces
c) 50 meters indoor swimming pool	1 piece	c) Seats are no less than 600 pieces
d) Table tennis (badminton) room	1 room	d) Each special used room ground is wood or plastic
e) Aerobics room	1 room	
f) Fixed student' physique test place	1 block	

According to statistics, Huanggang Normal University indoor site area is nearly 3450m², outdoor site area is nearly 37583m², specification is as TABLE 3. And Huanggang Normal University general full-time students in school are nearly above 16000 people, it divides into new and old two campuses, from the table, it can see that only new campus has a standard plastic athletic field, old campus has a 300m² plastic athletic field. Other basket court, football field, volleyball court, tennis court total area and two athletic fields areas are 41033m², and no comprehensive stadium, it hasn't yet arrived at university stadium construction standard, and hinders teaching and students' extracurricular interests cultivation and school development.

TABLE 3: Hanggang Normal University Sports Site facilities areas table

Huanggang Normal University sports site facilities	New campus:		Old campus:	
	Quantity (piece)	Area(m ²)	Quantity (piece)	Area(m ²)
Standard plastic athletic field	1	15575	0	0
300m plastic athletic field	0	0	1	9870
Basketball court	16	6720	6	2520
Football field	1	7140	1	2800
Volleyball court	9	1458	4	648
Swimming pool	0	0	1	500
Tennis court	2	528	1	264
Badminton stadium	1	750	0	0
Gym hall	0	0	1	350
Fitness center	0	0	1	350
Figure room	0	0	1	200
Table tennis training hall	1	900	1	400

RESEARCH OBJECTS AND RESEARCH METHODS

Research objects

They are Huanggang Normal University undergraduate all students. Random select partial Huanggang Normal University students, release 150 pieces of questionnaires, from which effective subject are 138. Use Huanggang Normal University dual degree on-line QQ group's students on-line filling methods, totally release 50 pieces of questionnaires, effective questionnaires are 50 pieces. The investigation totally releases 200 pieces of questionnaires, effective subjects are 188, and effective rate is 94%.

Research methods

Documents literature

By consulting relative documents, it understands national requests on universities stadiums construction standard equipment, then compares it with Huanggang Normal University stadium configuration, and finds out Huanggang Normal University facilities shortcomings. Widely consult and collect stadium construction relative documents in Huanggang Normal University library and electronics professional periodicals net, which is helpful for forming general impression on the topic, then compare with actual information and make analysis and sort out to provide firm theoretical basis for the research.

Questionnaire survey

The research adopts randomly release questionnaire method as well as Huanggang Normal University dual degree online QQ group students' on-line filling methods to provide basis for investigation data statistics this time.

Mathematics statistics

Use Excel software to make statistical analysis of investigation questionnaires data.

RESULT AND ANALYSIS

Huanggang Normal University students' physical exercises participation basic status

The investigation learns some basic status mainly from Huanggang Normal University students' physical exercises participation frequency, sports fields' utilization basic status and students' exercises participation purposes.

TABLE 4 : Huanggang Normal University schoolboys and schoolgirls physical exercises participation frequency

	Schoolboy		Schoolgirl	
	Number of people	Proportion (%)	Number of people	Proportion (%)
Basically every day	6	3.19	0	0
2-3 times per week	25	13.29	27	14.36
1 time per week	33	17.55	36	19.15
1 time per fortnight	20	10.64	20	10.64
Basically don't take exercises	7	3.72	14	7.44

By above TABLE 4, it is clear that number of people take physical exercises as 1-3 times per week are most that occupy 64.35%. It is consistent to Xu Lan research result. There are partial students that mainly are schoolgirls, their physical exercises awareness is not strong and don't take sports exercises at ordinary times. Partial reasons for not participating in sports are their sluggishness, other reasons are their favorite sports lack of proper fields and companies, such as some people love aerobics, but they can only take exercises in dormitory or classroom at ordinary time.

TABLE 5 : Students' often utilized stadium status

	Football field	Basketball court	Tennis court	Badminton stadium	Volleyball court	Table tennis training hall	Swimming pool	Aerobics venue	Dancing room	Stadium outside school
Number of people	7	30	8	49	12	62	0	9	2	7
Proportion	3.72	15.96	4.25	26.06	6.38	32.98	0	4.78	1.06	3.72

TABLE 6 : School stadium utilization tense degree

	Tense	Not tense	Unclear
Number of people	112	58	18
Proportion (%)	59.57	30.85	9.57

It is clear that school university students often use stadium status in order to sort as following: table tennis training hall, badminton stadium, basketball court, volleyball court, aerobics venue, tennis court, stadium outside school, football field, dancing room and so on. Research shows most of female university students are interested in net separated events that have certain exercise amount, weak antagonism and without body contacting, while schoolboys are interested in basketball, badminton, football, volleyball these antagonism events of large exercises amount, which is consistent to conclusion of Li Xia researched "University students physical exercises participation influence factors", it conforms to current university students extracurricular physical exercises status. Grasp psychology of students active and competitive in the age phase is a good opportunity to cultivate them to form into self-conscious exercises habits. Above table shows Huanggang Normal University students more utilization is relative convenient outdoor fields, but they generally select badminton stadium and table tennis training hall to utilize frequently, which shows students are mostly liking badminton and table tennis, according to information that students love swimming are quite a lot, but Huanggang Normal University has no available swimming pool, old campus swimming pool is rarely open throughout the year. Combine with investigation status, above half students think that sports fields are tense, and above 90% students that select badminton stadium and table tennis training hall think that stadium is not enough, if it is in badminton class, other classmates basically have no opportunities to take badminton exercises,

and administrators often close badminton stadium with consideration of maintaining stadium facilities, students can only take random exercises in dormitory building downstairs and other irregular fields, it cannot arrive at technical level that some students pursue, the students that select unclear about sports field utilization status are basically not interested in sports, they are students of fewer cognition degree.

TABLE 7 : Purposes for students participating in physical exercises

	Hobbies and interests	Relieve the pressure	Strengthen physique	Enhance communication	Pass time	Others
Number of people	45	54	40	29	11	9
Proportion (%)	23.93	28.72	21.28	15.43	5.85	4.79

In physical exercises and sports competitions, it can improve students' communicative abilities and environment adaptability; learn communication with people and society. Research shows a person if he cannot reduce and control depression and anxiety for a long-term, it will generate negative impacts on his physical and psychological health, and positive participating in physical exercises can effectively reduce these defective factors impacts on body and psychology. In the spare time of tense learning, proper physical exercises can let left and right brain to make alternate activity, it is a kind of positive break, and can speed up blood circulation and metabolism, let body to give off waste, make people get relaxed, pleasure emotion experiences. From above table, it is clear that 36.71% students participate in physical exercises are to build body and enhance communication with classmates, 28.72% students take pressure relieving as purpose of physical exercising. And 23.93% students are for their hobbies and interests, which is a big number for the whole school, especially for some schoolgirls, they love aerobics and sports dances, due to school lacks of the aspect hardware facilities that let some students hobbies or even dreams to be worn away, which also lets school students sports technology to distance from other schools. Other partial classmates are for passing time, self shaping and classroom demands and so on.

Students' evaluation on Huanggang Normal University stadium

By investigating on Huanggang Normal University stadium distribution, open degree and indoor stadium facilities and existing problems, let students to evaluate Huanggang Normal University presently offered physical exercises conditions for students.

TABLE 8 : School stadium distribution status evaluation

	Reasonable	Unreasonable	Not bad
Number of people	38	97	53
Proportion (%)	20.21	51.61	28.19

According to questionnaire returning statistical status, for school stadium distribution status evaluation, what needs to illustrate is almost all old campus students response that is not reasonable, in view of proportion, people with unreasonable attitude are slightly more.

TABLE 9 : Evaluation on school indoor sports fields

	Facility completeness	Tidy environment	Incomplete facilities	Facilities are old
Number of People	11	67	82	28
Percentage (%)	5.85	35.63	43.61	14.89

Huanggang Normal University indoor stadiums mainly have an aerobics venue, a dancing room, a badminton stadium, and two table tennis training halls. Among them, badminton stadium has already mentioned obviously insufficient fields in context. Aerobics venue and dancing room only locate in old campus; some students in new campus basically don't know it. In aerobics venue, facilities are old, apparatus are insufficient, and fields are not enough to aerobics exercise. Facilities in dancing room are

also old and it has not clothes changing room, old dancing room forms vivid comparison with beautiful dance and dancers' postures. In addition, I think that except for strengthening morality, extensive learning, practice, foresight spiritual cultures, Huanggang Normal University also needs to create a group of substantive school delegation to represent school features. In previous Huanggang Normal University sports meeting, no matter dragon dance lion dance, or hundreds people Latin dance, all let whole school teachers and students to feel extremely shocked, and comprehensive stadium construction is helpful for Huanggang Normal University delegation setting up. Comprehensive stadium construction can enrich campus ports culture, and it will powerful propel to school teachers and students, student to student communication and exchange, it has positive promotion to harmonious campus construction, the effects on Huanggang Normal University sustainable development, education ministry undergraduate teaching work level evaluation are also obvious, it can also drive Huanggang people national fitness awareness to the big degree, and is helpful for constructing civilized Huanggang.

Student participating in physical exercises constraint factors

TABLE 10 : Constraint factors for participating in exercises

	Time factor	Field factor	Companion factor	Else
Number of people	54	77	39	18
Proportion (%)	28.72	40.95	20.74	9.57

In university students' physical exercises influential factors, facilities and field constraint factors overall occupy 41.14%, and in these factors both men and women opinions are higher. Actually in TABLE 6 regarding physical exercises facilities tense degree, it can also find that 59.55% students presents field facilities tense utilization proportion are consistent to constraint factors. It also shows the trial investigation particularly has certain objectivity, and meanwhile it also shows Huanggang Normal University sports facilities and openness is to be improved. In addition, 28.94% students are limited by course learning and other extracurricular activities, which restricts them to participate in physical exercises; 20.63% students, mostly are schoolgirls presents that they lack of like-minded companions; 9.29% students select other factors, according to investigation shows that other factors include people's sluggishness, no interests, no guidance and so on.

CONCLUSION

According to the investigation, 99% students think that physical exercise is indispensable in life, which is consistent to Sun Jian research thought of principal component analysis –based general institutes of higher learning university students spare time sports constraint factors. But due to some subjective and objective reasons, it causes students rarely participating in physical exercises except for physical education course. From investigation process, it is clear students physical exercises constraint factors, in view of subjective, with current society rapidly development, competition intensifies, life rhythm speeds up, learning task gets heavier, personal pressure increases, body gets tired after learning, adding that each test should be confronted in spare time of learning, student's exercises emotions are affected. In view of objective, due to multiple aspects emphasis is not enough, let students' daily exercises to be the state of unwatched; stadiums shortage, apparatus, equipment incompleteness, which has impacts on their exercises positivity and participation degree. Solution of these problems rely on constantly improving emphasis on sports, increasing sports facilities construction funding, improving and increasing sports facilities, letting students to have full fields, facilities and conditions to take physical exercises, establishing perfect school group activity system, comprehensive establishing national fitness awareness, forming into atmosphere of all positive participation in exercises.

Investigation result shows that 53.5% of students in school participating in physical exercises are for building body and enhancing communication with classmates, 18% students are for their hobbies and

interests. The school students fitness requests in order to sort according to importance are as: Have fields and apparatus, Have time, Have companions to do exercises together, overcome self sluggishness, Have guidance and so on. Most of students think physical exercise is important, but Huanggang Normal University present stadium construction funding is not enough, its possessed stadium and students amount are in disproportion, it cannot meet current students' fitness demands, fields are not enough, physical exercises atmosphere is insufficient, lack of extracurricular sports fitness exercises guiding and so on, it seriously affects students' sports interests development, physical teaching and mass fitness services. To solve these problems, it should increase Huanggang Normal University stadium constructions, constantly improve students' learning and exercising environment and conditions, perfect extracurricular students' exercise guiding system and institution. Huanggang Normal University as unique Huanggang undergraduate university, it entirely has liability to optimize campus cultural environment, and it is necessary to build a comprehensive stadium, let students to set up lifelong physical exercise persisting habits, arrive at physical education purpose, conform to students personal development, and is consistent to national regulated universities sports facilities configuration.

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