

# Research on coaching faculty in Sichuan water sports school

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**Abstract:** This study investigates the current status of coaching faculty in Sichuan Provincial Water Sports Schools through literature review, questionnaire survey, interview, and mathematical statistics methods. The findings reveal that: there are only 6 water sports schools in Sichuan Province, with both the number of schools and coaches being very limited; male coaches outnumber female coaches, and the aging problem among water sports coaches is quite prominent; coaches' education is mainly bachelor's degree, with very few holding master's degrees, and the professional title structure is dominated by intermediate and senior coaches, with very few junior and national-level coaches; coaches rarely participate in external training annually, publish few papers each year, and have weak overall research capabilities; most coaches are retired athletes, indicating a single source of coaches. Based on the problems identified in this survey, several targeted countermeasures are proposed to provide some references for the development of water sports schools in Sichuan Province.

**Keywords:** water sports, school, coach, faculty

## 1. Introduction

Water sports are an important component of China's sports industry, mainly including swimming, diving, rowing, canoeing, water polo, synchronized swimming, sailing, windsurfing, diving, motorboat, and water skiing. Among these, rowing, canoeing, sailing, and windsurfing are Olympic events. China's water sports started relatively late. It was not until the gold medal in men's double canoe 500m at the 2004 Athens Olympics that China achieved its first Olympic gold medal breakthrough in water sports, which was largely attributed to the scientific training methods adopted by Chinese coaches.

At the 2001 National Coaches Conference, Li Furong, Director of the General Administration of Sport of China, pointed out: "A good coach can lead a group of athletes well, and a group of good coaches can drive the entire sport forward." This fully demonstrates the crucial role coaches play in the development and improvement of a country's sports industry. Sichuan's water sports teams, established in 1984, have achieved outstanding results in major international and domestic competitions. At the 2004 Athens Olympics, Yin Jian won a silver medal in windsurfing. At the 2008 Beijing Olympics, a gold medal was won. In previous Asian Games, gold medalists in rowing and canoeing included Zhao Xiaoli, Peng Chun, Li Qin, Huang Zhigang, and many other athletes. World champions in rowing included Liu Xirong, Li Qin, and Chen Fang. Gold medalists in rowing and canoeing at the National Games, the highest domestic level competition, included Zhou Xingxu, Xie Mingyong, Zhang Li, and Yang Yali. As water sports continue to develop domestically, various coaching faculty problems in Sichuan Provincial Water Sports Schools have become increasingly prominent. How to solve existing coaching faculty problems and achieve scientific management of faculty strength is currently an issue that deserves attention.

This study mainly investigates the overall situation of coaching faculty in Sichuan Provincial Water Sports Schools, hoping to identify problems in coaching faculty. Based on the identified problems, targeted countermeasures are proposed to provide valuable theoretical basis and reference for the long-term development of water sports schools in Sichuan Province.

## 2. Research objects and methods

### 2.1. Research objects

Chengdu Xin Jin Water Sports School; Xi chang Qiong Hai Water Sports School; Leshan Wu tong Qiao District Water Sports Technical School; Sui Ning Water Sports School; Jianyang Water Sports School; Ya' an Water Sports School.

### 2.2. Research methods

#### 2.2.1. Literature review method

This study consulted books and materials including the General Administration of Sport of China's Water Sports Industry Development Plan, Water Sports, and Chinese Coaches Training Materials. Additionally, 28 water sports-related references were downloaded from CNKI (China National Knowledge Infrastructure) to provide adequate theoretical preparation for this study.

#### 2.2.2. Questionnaire survey method

A total of 42 water sports coach questionnaires were distributed for this study, with 42 questionnaires returned, achieving a 100% return rate. After careful inspection, all 42 questionnaires were valid, resulting in a 100% validity rate. The questionnaires were distributed face-to-face with all water sports coaches, ensuring both the return rate and validity rate.

#### 2.2.3. Interview method

During the survey period, this study conducted interviews and exchanges with some coaches from Sichuan Provincial Water Sports Schools. The interview content mainly focused on coaches' personal situations, which provided good guidance for this study.

#### 2.2.4. Mathematical statistics method

WPS 2016-Excel software was used to process statistical data and produce data tables for display.

## 3. Research results and analysis

### 3.1. Sichuan water sports schools: Distribution analysis

Sichuan Province has 18 prefecture-level cities and 3 autonomous prefectures. It is a populous province and a major sports province in China. There are 1,419 rivers of various sizes within the province, including 345 rivers with a basin area of over 500 km<sup>2</sup> and 22 rivers with a basin area of over 1,000 km<sup>2</sup>, known as the "Province of a Thousand Rivers." Sichuan's abundant water resources provide inherent advantages for the development of water sports. Water sports schools have been established in Xin Jin, Qiong Hai, Sui Ning, Leshan, Jianyang, and Ya' an, delivering numerous outstanding athletes for China's water sports. From the geographic distribution of water sports schools in Sichuan Province, it can be seen that they are mainly concentrated in the areas surrounding Chengdu. Cities with developed water networks in the southeast of Sichuan such as Yibin, Nei jiang, Lu Zhou, and Zigong, and in the northeast such as Guang yuan, Ba zhong, Nanchong, and Da Zhou have not yet established water sports schools. This indicates that the number of water sports schools in Sichuan Province is very small and their geographic distribution is unreasonable, which is one of the main factors affecting the development of water sports schools in Sichuan Province.

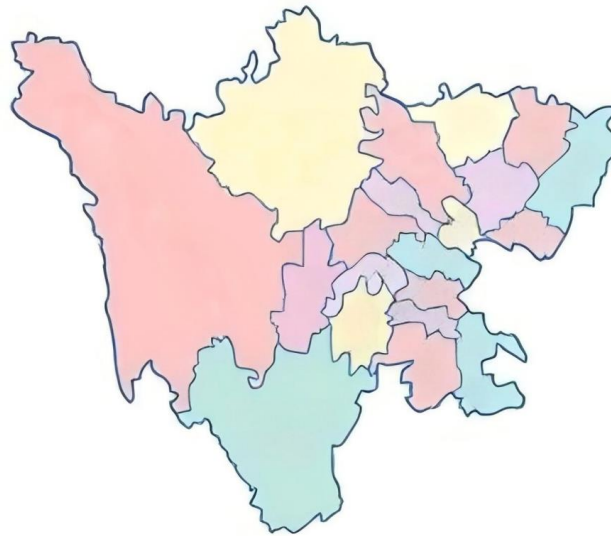


Figure 1 Map of Cities in Sichuan Province

Table 1 Number and Geographic Distribution of Water Sports Schools

City	School Name
Chengdu	Xin Jin Water Sports School
Chengdu	Jianyang Water Sports School
Xi chang	Qiong Hai Water Sports School
Leshan	Wu tong Qiao Water Sports School
Sui Ning	Sui Ning Water Sports S chool
Ya' an	Ya' an Water Sports School

### 3.2. Sichuan water sports coaches: Basic analysis

#### 3.2.1. Coach numbers in Sichuan water sports schools

Coaches are an important component of sports schools, and a certain number of coaches is required for sports schools to carry out training normally. From the survey results in Table 2, it was found that there are only 42 water sports coaches in the 6 water sports schools in Sichuan Province, indicating that the coaching faculty in these 6 schools is very weak. Through interviews with leaders in charge of water sports schools, it was learned that the small number of coaches is mainly caused by the following factors: due to the generally improved educational level of parents born in the 1970s and 1980s, it is now very difficult to recruit athletes at the grassroots level; with fewer athletes, the number of coaches has correspondingly decreased; most water sports schools have only retained rowing, canoeing, and swimming programs, while Qiong Hai Water Sports School has only retained windsurfing and sailing and other advantageous water sports programs; as water sports programs have been reduced, the number of coaches has also decreased; local sports authorities do not attach sufficient importance to water sports programs; water sports school facilities and teaching supporting equipment are limited, making it impossible to recruit athletes and coaches for various water sports programs. From the overall survey situation, the small number of coaching faculty in Sichuan Provincial Water Sports Schools is one of the main factors affecting their development.

Table 2 Coaching Faculty Numbers in Water Sports Schools

Water Sports School	Water Sports Coaches (persons)	%
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Xin Jin Water Sports School	20	47.6
Jiayang Water Sports School	3	7.1
Qiong Hai Water Sports School	5	11.9
Wu tong Qiao Water Sports School	4	9.6
Sui Ning Water Sports School	5	11.9
Ya' an Water Sports School	5	11.9

### 3.2.2. Gender structure of Sichuan water sports coaches

Due to the different water sports programs, there are certain differences in the gender distribution of coaches. From the survey results in Table 3, it was found that there are 27 male coaches and 15 female coaches in Sichuan Provincial Water Sports Schools, indicating a certain gap in the number of male and female coaches. Through interviews with some coaches from Sichuan Provincial Water Sports Schools, it was learned that the main reasons for the small number of female coaches are: there are few female water sports athletes in major sports universities nationwide; many female athletes from professional water sports teams prefer to teach in primary, secondary, or higher education institutions rather than work in professional teams after retirement, because schools have summer and winter vacations and holidays, the work is relatively easy, and there is less pressure, while professional training teams focus entirely on competitions and training throughout the year with little rest time and greater pressure; through interviews with some leaders of Sichuan Provincial Water Sports Schools during the survey, it was learned that many schools are reluctant to recruit female coaches because: female coaches have 98 days of maternity leave during pregnancy, and the breastfeeding period after childbirth lasts 1-2 years, which will certainly affect the annual training of the entire team during this period; female coaches have several days of special physiological periods each month when they cannot touch cold water or enter the water to provide technical guidance to young athletes in the water; male coaches can retire at age 60, while female coaches can retire at age 50. The above factors are also reasons why some leaders of water sports schools do not like to recruit female water sports coaches.

Table 3 Coaching Faculty Numbers in Water Sports Schools (N=42)

Gender Structure	Water Sports Coaches (persons)	%
Male Coaches	27	64.3
Female Coaches	15	35.7

### 3.2.3. Age structure of Sichuan water sports coaches

A coaching team is a multi-level dynamic complex. In terms of age structure, a team combining old, middle-aged, and young coaches is the optimal combination. From the survey results in Table 4, it was found that there are no coaches aged 20-30 in Sichuan Provincial Water Sports Schools; coaches aged 31-40 account for 19%; coaches aged 41-50 account for 59.5%; and coaches aged 51-60 account for 21.5%. This indicates that the age structure of coaches in Sichuan Provincial Water Sports Schools has shown an aging trend. Through interviews with leaders of some water sports programs, it was learned that the number of athletes and coaches in various water sports schools in Sichuan Province is relatively fixed, and water sports coaches are not recruited every year but only 1-2 coaches are recruited every few years. This is one of the main reasons for the prominent aging problem among water sports coaches in Sichuan Province.

Table 4 Age Structure of Coaches in Water Sports Schools (N=42)

Age Structure	Water Sports Coaches	%
20-30	0	0
31-40	8	19

41-50	25	59.5
51-60	9	21.5

### 3.2.4. Education structure of Sichuan water sports Coache

Education is one of the standards for measuring a coach's ability and knowledge mastery. From the survey results in Table 5, it was found that there are no coaches with associate degrees in Sichuan Provincial Water Sports Schools; coaches with bachelor's degrees account for 66.7%; coaches with master's degrees account for 33.3%; but there are no coaches with doctoral degrees. This indicates that there is still room for further improvement in the overall education level of coaches in Sichuan Provincial Water Sports Schools. Through interviews with some water sports coaches, it was learned that coaches' professional titles, salaries, and wages are linked to their education levels, which is one of the reasons why many water sports coaches pursue higher education; many water sports schools require high education levels, athletic achievements, and training competence when recruiting coaches, and contracts are now signed annually or for several years at a time. Many water sports coaches do not want to be eliminated, so they must improve their education levels to adapt to the development of water sports schools. This is the main reason why water sports coaches in Sichuan Province continuously pursue further studies and improve their education levels. From the overall survey situation, the education level of coaches in Sichuan Provincial Water Sports Schools is relatively high, meeting the talent structure requirements for contemporary water sports school coaches.

Table 5 Education Structure of Coaches in Water Sports Schools (N=42)

Education Structure	Water Sports Coaches	%
Associate Degree	0	0
Bachelor's Degree	28	66.7
Master's Degree	14	33.3
Doctoral Degre	0	0

### 3.2.5. Professional titles of Sichuan water sports coaches

Coaches' professional titles reflect, to a certain extent, people's recognition of their professional competence. From the survey results in Table 6, it can be seen that junior coaches account for only 4.8% in Sichuan Provincial Water Sports Schools; intermediate and senior coaches account for 59.5% and 23.8% respectively; and national-level coaches account for 11.9%. This indicates that some coaches have not yet met the requirements for professional title evaluation due to certain reasons. From the overall survey situation, there are many intermediate and senior coaches in Sichuan Provincial Water Sports Schools, while junior and national-level coaches are the fewest. This indicates that the professional title structure of coaches in Sichuan Provincial Water Sports Schools is unreasonable.

Table 6 Professional Title Structure of Coaches in Water Sports Schools (N=42)

Title Structure	Water Sports Coache	%
Junior Coach	2	4.8
Intermediate Coach	25	59.5
Senior Coach	10	23.8
National-level Coach	5	11.9
Unrated	0	0

### 3.2.6. Annual training frequency of Sichuan water sports Coaches

From the survey results in Table 7, it was found that water sports coaches in Sichuan Province rarely participate in external training annually, indicating that leaders of water sports programs in Sichuan Province do not attach sufficient importance to coaches' external training and learning. Through interviews

with some water sports coaches, it was learned that the main reasons why water sports coaches in Sichuan Province rarely participate in external training are: the small number of coaches in water sports schools means that athlete training will be affected if coaches go out for training; if external training occurs near competition months, many water sports coaches are unwilling to participate in order to ensure athletes' competition training and condition; training for water sports schools in Sichuan Province is mainly conducted outside the province, and the training time plus round-trip travel takes at least one week, with much of it being theoretical training, which many water sports school coaches do not value. Additionally, it was found during the survey that water sports coaches around 50 years old basically do not participate in external training, and external training is mainly attended by coaches under 45 years old.

Table 7 Annual External Training Frequency of Water Sports Coaches (N=42)

Water Sports Program	Water Sports Coache	%
1-2 times per year	24	57.1
3-4 times per year	12	28.6
5-6 times per year	0	0
More than 7 times per year	0	0
Never go out for training annually	6	14.3

### 3.2.7. Research capabilities of Sichuan water sports Coaches

Training relies on scientific research data for guidance, and scientific research requires training to obtain experimental data; therefore, training and scientific research are closely related and inseparable. From the survey results in Table 8, it was found that coaches in Sichuan Provincial Water Sports Schools publish very few papers annually, indicating that the research level of coaches in Sichuan Provincial Water Sports Schools is relatively low. Through interviews with some water sports coaches, it was learned that many water sports coaches write and publish papers mainly for professional title evaluation; once they obtain their titles, they rarely engage in scientific research or write papers. Many water sports coaches expressed during interviews that water sports training basically occurs every day, with very short rest and adjustment periods throughout the year. They basically have to get up early every day to train athletes, manage athletes' lives after daily training, and write training plans for the next week or competition periods in the evening. Therefore, they rarely have free time for scientific research and experimental studies.

Table 8 Research Capabilities of Coaches in Water Sports Schools (N=42)

Source	Water Sports Coache	%
Publish 1-2 papers annually	27	64.3
Publish 3-4 papers annually	5	11.9
Publish 5-6 papers annually	0	0
Publish more than 7 papers annually	0	0
Never publish papers annually	10	23.8

### 3.2.8. Coach sources in Sichuan water sports schools

The training concept that excellent athletes must be excellent coaches has been recognized and accepted by China's sports community. After the reform and opening up, for a long period, many sports programs in China selected outstanding athletes from among athletes to serve as coaches, which is also a characteristic of China's sports system. From the survey results in Table 8, it was found that 9.5% of coaches in Sichuan Provincial Water Sports Schools are graduates from sports universities who applied for coaching positions; 85.7% are former professional water sports athletes who remained at the school after retirement; and 0% are foreign professional water sports coaches hired from abroad. This indicates that the sources of water sports coaches in Sichuan Province are very singular.

Table 9 Coach Sources in Water Sports Schools (N=42)

Source	Water Sports Coache	%
Sports University Graduates	4	9.5
Retired Athletes Retained as Coaches	36	85.7
Foreign Coaches Hired	0	0
Other	2	4.8

## 4. Coaching faculty development strategies

### 4.1. Expand water sports schools in Sichuan

There are only 6 water sports schools in Sichuan Province. Therefore, to develop water sports schools in Sichuan, the number of schools must be increased. Water sports schools should be established in cities with developed water networks in southeast Sichuan such as Yibin, Nei jiang, Lu Zhou, and Zigong, and in northeast Sichuan such as Guang yuan, Ba zhong, Nanchong, and Da Zhou. Only in this way can the distribution of water sports schools in Sichuan be rationalized, and coaches can be distributed across cities throughout the province, which will greatly help in selecting outstanding young water sports athletes.

### 4.2. Expand coaching faculty scale

Currently, only Chengdu Xin Jin Water Sports School has 20 coaches, while the other 5 water sports schools each have only 3-5 coaches. With few water sports coaches, the number of athletes trained is also small. Only by increasing training programs and expanding the number of water sports coaches can water sports schools develop better.

### 4.3. Diversify coach recruitment channels

Currently, coaches in Sichuan Provincial Water Sports Schools are mainly retired athletes, resulting in a single source of coaches. It is recommended that Sichuan water sports schools recruit more highly educated talents from sports universities, preferably sports professionals with overseas study experience, and also recruit capable foreign coaches from abroad. Only through diversified coach recruitment can Sichuan water sports schools improve the overall training level of water sports coaches.

### 4.4. Boost coach research and publications

Currently, coaches in Sichuan Provincial Water Sports Schools publish very few papers annually, indicating weak overall research capabilities. To change this situation, it is recommended that Sichuan water sports schools establish relevant incentive systems to reward coaches who publish more papers and higher-quality papers annually, thereby fully mobilizing coaches' enthusiasm for scientific research and paper writing.

### 4.5. Increase coach training participation

Currently, the small number of coaches in Sichuan Provincial Water Sports Schools and their limited annual participation in various water sports training programs are unfavorable for coaches to understand cutting-edge information on domestic and international water sports training, competitions, and management, and are detrimental to the development of water sports programs in Sichuan Province. Therefore, coaches in Sichuan Provincial Water Sports Schools should increase their annual participation in external training.

## 5. Conclusion

There are only 6 water sports schools in Sichuan Province, with a small number of schools and very few coaches, and their geographic distribution is unreasonable. This indicates that Sichuan Provincial

Water Sports Schools face serious faculty shortages. Male coaches outnumber female coaches in Sichuan Provincial Water Sports Schools, and coaches are generally aged between 31-40 and 41-50 years old, with a prominent aging problem among water sports coaches. Coaches' education is mainly bachelor's degree, with very few water sports coaches holding master's degrees, indicating that the overall education level of coaches in Sichuan Provincial Water Sports Schools is relatively low. The professional title structure is dominated by intermediate and senior coaches, with very few junior and national-level coaches, indicating an unreasonable professional title structure. Coaches rarely participate in external training annually, which is unfavorable for broadening their horizons and enhancing their capabilities and development. Coaches publish very few papers annually, and their purpose for publishing papers is very strong, indicating weak research capabilities in Sichuan Provincial Water Sports Schools. Coaches are mainly retired athletes, indicating a single source of coaches in Sichuan Provincial Water Sports Schools, which is unfavorable for their development.

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