

# Research on the Construction of Professional Development System for Primary and Middle School Teachers --- Take Zhanjiang City as an example

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**Abstract:** *There is a large team of teachers in primary and secondary schools, and teachers' education, teaching ability, and information literacy need to be improved. Based on a survey of the status of professional development of teachers in primary and secondary schools in Zhanjiang, it is proposed to establish a development system. The system includes a ladder system to solve primary and secondary schools. Hierarchical issues of teacher professional development, based on the hierarchy construction, explore a scientific, effective, and operable teacher professional development system from the aspects of platforms, methods, and support systems, with a view to forming a more complete and unified system for the development of teachers in primary and secondary schools, in order to better promote the development of regional education modernization.*

**Keywords:** *teacher professional development, ladder system, platform system, method system, support system*

## 1. Introduction

Teacher professional development refers to the process by which teachers, as professionals, continue to develop and improve in the three dimensions of professional thought, professional knowledge, and professional ability, that is, the process from novice teachers to expert teachers. The construction of the professional development system for teachers is related to the professional growth direction, positioning and planning of all primary and secondary school teachers in the region. It is an influential factor and important mechanism for the professional development of regional teachers. Zhanjiang has a large team of primary and secondary school teachers. An effective and maneuverable professional development system is indispensable for the teachers in the region, and it is also the cornerstone of education modernization and future of Zhanjiang.

## 2. The status quo of professional development of teachers in primary and secondary schools in Zhanjiang

According to the Statistical Analysis Report on the Educational Development of Zhanjiang City in 2019, the total number of primary and secondary school teachers in this city is at a surplus at this stage, and the structural shortage of rural primary school teachers is difficult to solve in a short time. The problem of weak subjects of full-time teachers in music, sports, arts, information technology and morality in primary schools, primary schools, and branch schools is a serious problem, which seriously restricts the balanced development of compulsory education, and greatly hinders the process of education modernization in Zhanjiang.

### 2.1 Education status of teachers

There are 93,300 full-time teachers in Zhanjiang, including 37,471 full-time teachers in the elementary schools, with a qualification rate of 99.93%. The proportion of full-time teachers with a college degree or above is 96.92%. There are 21,044 full-time teachers in junior high schools in the city, and the qualification rate is 99.92%. There are 11,567 full-time teachers in high schools, and the qualification rate is 99.48%.

**2.1.1 The situation of primary school teachers**

From the perspective of academic qualifications, the city's full-time primary school teachers accounted for 45% of college graduates, and high school graduates and below accounted for 3% (see Figure 1-3 for details). It can be seen from the figure that primary school teachers are over 45.39% of the teachers are aged, and the overall is relatively large, and the education level is low. Among them, Nansan and Leizhou District still needs more room for improvement.

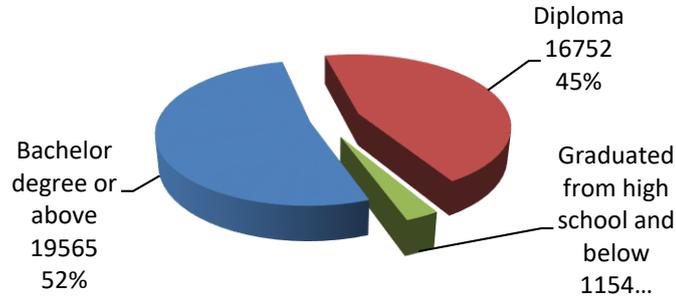


Figure 1 Distribution of educational background of full-time teachers in Zhanjiang primary schools

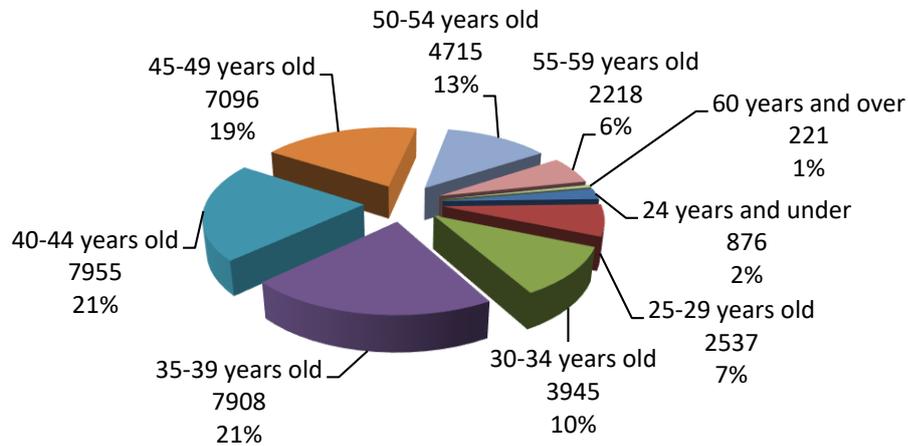


Figure 2 Age distribution of full-time teachers in primary schools in Zhanjiang

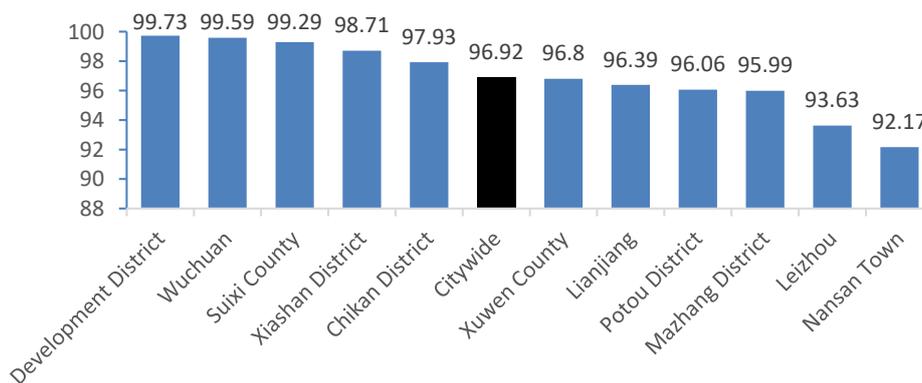


Figure 3 The situation of full-time teachers with a junior college degree or above in each county (district) of Zhanjiang City in 2019

**2.1.2 The situation of junior high school teachers**

As shown in Figure 4-5, the age structure of junior high school teachers in the city is relatively reasonable. The educational background of junior high school teachers in various counties and the distribution of full-time teachers with a bachelor degree or higher is unbalanced. The highest proportion

is 95.10% in Xiashan District. Among them, less than 80% are 73.23% in Nansan District and 77.40% in Xuwen County.

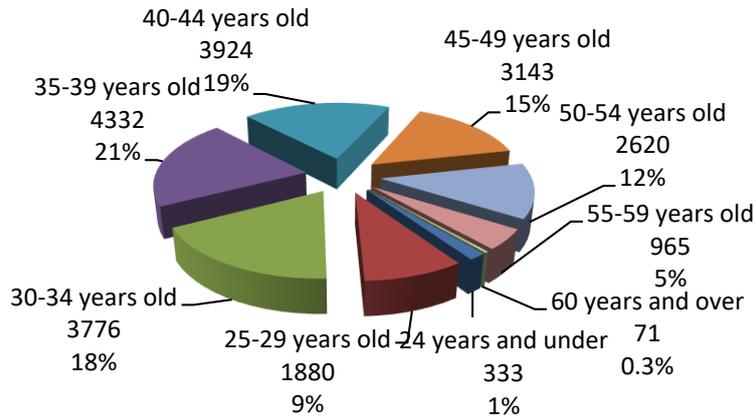


Figure 4 Age distribution of full-time junior high school teachers in Zhanjiang

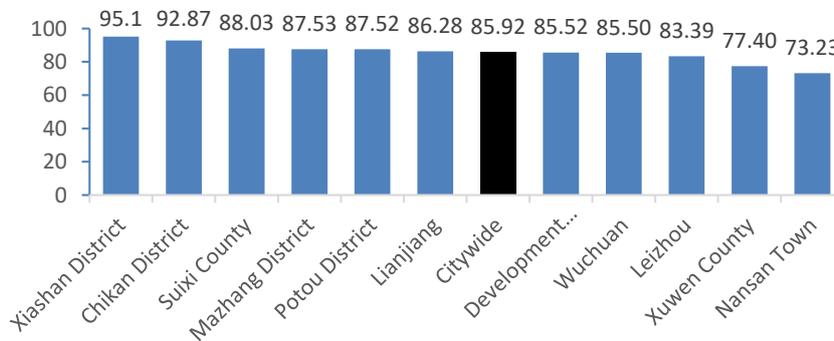


Figure 5 The proportion of full-time junior high school teachers in each county (district) of Zhanjiang City in 2019

### 2.1.3 The situation of high school teachers

As shown in Figure 6-8, the age structure of high school teachers in the city is reasonable. The proportion of young teachers aged 30-39 is 45%, which is relatively young. The distribution of full-time teachers with postgraduate qualifications in general high schools in each county is not balanced. The highest proportion is 21.20% in Xiashan District and other districts and counties are less than 10%.

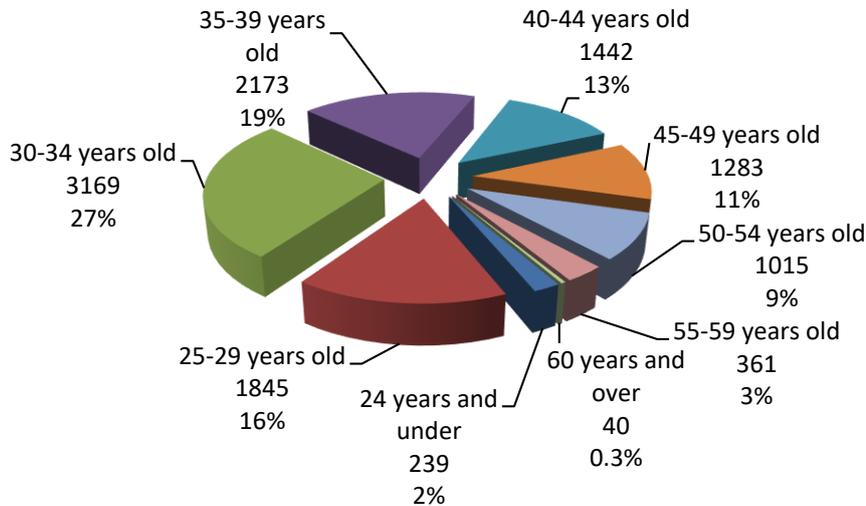


Figure 6 Age distribution of full-time teachers in senior high schools

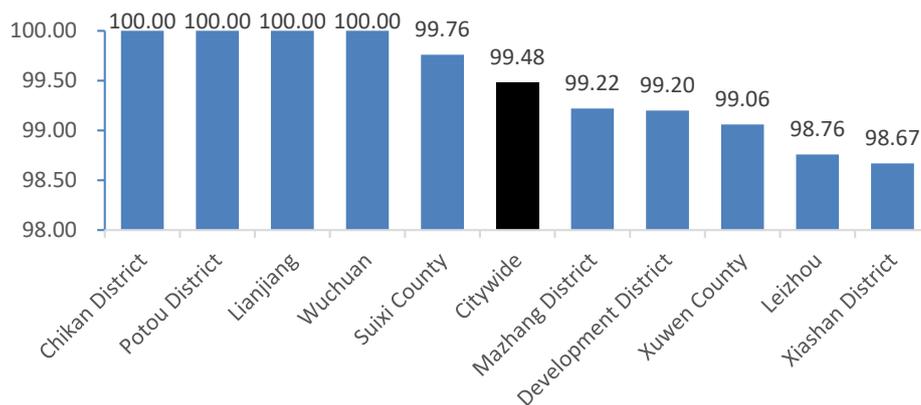


Figure 7 Proportion of undergraduate or higher education of full-time teachers in ordinary high schools in each county (district) of Zhanjiang in 2019

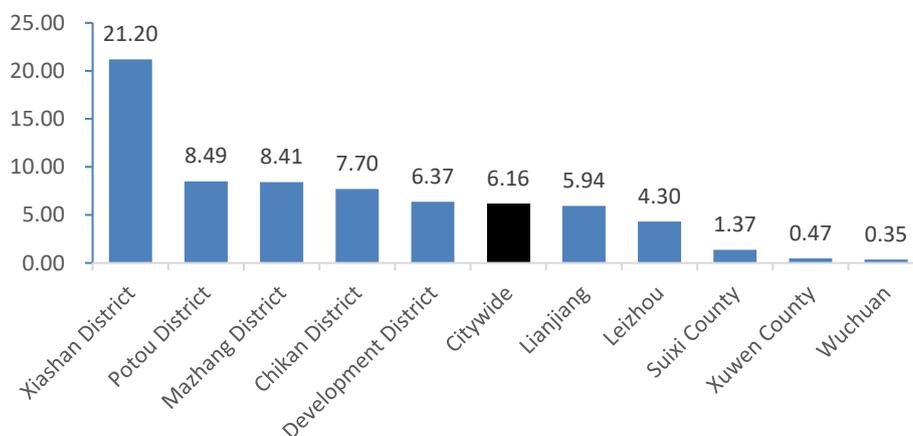


Figure 8 Proportion of postgraduate qualifications of full-time senior high school teachers in each county (district) of Zhanjiang in 2019

## 2.2 Status of professional competence of teachers

The status quo of the professional competence of the teaching staff can be gleaned from the awards of teachers participating in the Provincial Teaching Competence Competition. Judging from the awards of Zhanjiang City's participation in the first Guangdong Young Teacher Teaching Ability Competition announced in 2019, the primary school group has no disciplines (a total of 10 subjects) can get the first prize, six subjects include English, ethics and the rule of law, mathematics, science, information technology, comprehensive practical activities, etc., and the other three prizes (the lowest prize is the third prize); junior high school group received first prizes include five disciplines (English, Mathematics, Physics, Biology, and History) (a total of 14 disciplines), second prizes in five disciplines of Chinese, chemistry, information technology, sports and health, and comprehensive practical activities, and the remaining four The subject is the third prize; the high school group won the first prize in three disciplines (a total of 15 disciplines) in sports and health, general technology and comprehensive practical activities, and the second prize of four disciplines including history, biology, physics and chemistry, and the rest eight subjects are awarded third prizes. It can be seen that the results of the primary and high school groups are not satisfactory, and the results of the junior high school group are relatively outstanding.

According to the rules and judging standards of the Guangdong Province Young Teachers' Teaching Competence Competition, the teachers participating in the competition are among elementary and middle school teachers. They are excellent in terms of professional thinking, professional knowledge, and professional ability, and are recognized by schools, experts, and society. The backbone teachers are with rich experience in education and teaching. Judging from the awards of the Young Teachers Teaching Competence Competition, there is still a big gap between the comprehensive ability of the teachers in Zhanjiang City and the developed areas in Guangdong. In addition, among all the

contestants, only a high school chemistry teacher who is from Wuchuan No. 1 Middle School, which is the main urban school outside of Xiashan, Chikan, Development Zone. All the teachers in the junior high school section are from Peicai School, Jinshawan School, and Haidong School, Binhai School, which are private schools. All the contestants in the primary school came from the Xiashan and Chikan District. Because all the teachers participating in the provincial competition are the first players of each subject in Zhanjiang, it can reflect the fact that the uneven development of urban and rural areas in Zhanjiang has been deeply reflected in the uneven teaching capacity of urban and rural teachers.

Till September 2019, there are 197 Guangdong provincial backbone teacher candidates, who need to be trained for three years. There are 39 provincial backbone school principal candidates, 142 Zhanjiang City-level workshop hosts, including 100 teachers, 30 head teachers, 12 headmasters, 49 Guangdong top teacher workshop moderators (2018-2020), 49 head teacher workshop moderators, and 6 headmaster workshop moderators. According to statistics, the city has 74 special teachers in Guangdong Province and 25 full-time senior teachers. There are 19 full-time teachers and special-grade teachers, 7 “National Excellent Teachers” and 2 “National Model Teachers”. Compared to the number of full-time teachers in the city, the proportion of backbone teachers is very low, let alone expert teachers.

### ***2.3 Status Quo of Professional Construction of Teachers***

To be sure, with the continuous efforts of the Education Bureau of Zhanjiang City, it has made a series of achievements in the professional construction. The participation in various competitions at all levels has been significant in Guangdong, especially in recent years. In the evaluation of the achievement awards, the results have been outstanding in the eastern and western regions of Guangdong, and have won multiple special awards and first-class awards. The number of students who have entered the province's top 100 in the college entrance examination has also continued to make breakthroughs. Every year, the Education Bureau of Zhanjiang released the annual project of Educational Scientific Research Planning, leading the professional growth of primary and secondary school teachers. In order to encourage and stimulate the enthusiasm of primary and secondary school teachers to actively carry out scientific research, key projects are provided with 5,000 yuan.

As the leading, supervising and coordinating department for the professional development of Zhanjiang primary and secondary school teachers, the municipal primary and secondary school teachers development center became part of the Teacher Education College of Lingnan Normal University in 2018, and was approved by Lingnan Normal University through the competitive application in May, 2015. As a professional institution serving all primary and secondary school teachers in Zhanjiang, where the Teacher Development Center has contributed a great deal to the professional development of primary and secondary school teachers every year. The number of online training for middle school teachers has reached more than 20,000, of which close to 30,000 in 2019. The project office is also linked to the provincial development center, and three municipal-level workshops provide funding support ranging from 10,000 to 20,000 a year. So far, only one district has established a district-level development center, and the other 8 districts and counties have not yet been established.

## **3. Significance of the Professional Development System for Primary and Middle School Teachers**

With the development of economy, technology, culture, etc., the contradiction between the sharp growth of teachers' own professional development needs and the limited educational resources has become increasingly prominent. More and more primary and secondary school teachers who are under the influence of lifelong education thinking begin to think and seek ways and strategies for continuous improvement and development in terms of professional thinking, professional knowledge and professional capabilities.

### ***3.1 The need for the modernization of education***

The Outline of the National Medium- and Long-Term Education Reform and Development Plan (2010-2020) proposes that education modernization will be basically realized by 2020, a learning society will basically be formed, and it will enter the ranks of strong human resources. The growth and development of teachers in primary and secondary schools has always played a vital role. Only by realizing the modernization of the subject of education, the teacher, can we advance the modernization

of the educational cause step by step. Aiming at this important subject of teachers, the professional development system is necessary to be paid attention to and continued to innovate, so as to train modern and future-oriented teachers, and further promote the modernization of education.

### 3.2 The need for the coordinated development of education

The imbalance in the development of urban and rural education in Zhanjiang is obvious to all. The rural teachers need to be optimized to a certain extent more than the urban teachers. Due to the total number of teachers and the unreasonable layout of the education structure, the structure of rural primary school subject teachers is basically unbalanced. In particular, teachers in rural primary and secondary schools and remote campuses are relatively weak, and due to the limitation of the overall superbook, teachers with missing disciplines cannot be introduced normally. Although Lingnan Normal University currently train and tries to teach general subjects in primary schools, a lot of progress has been made, but fresh blood injection is necessary. The five-year consistent college-level public-funded targeted project at the beginning of junior high school funded by the World Bank has started, but the teacher injection is also five years later. The balanced development of district education should rely on coordinated development methods such as “county-managed schools” and “teacher exchanges” to solve the current problems.

### 3.3 The need for primary and secondary school teachers to settle down

In the past two years, there have been 3 provincial-level teachers transferred from Zhanjiang to teach in the Pearl River Delta, 2 city-level principals, 2 city-level teaching and research staff, and 7 are all super-level teachers, of which 3 are senior teachers. There are mainly factors such as high wages in the Pearl River Delta, a good development platform, and the importance of famous teachers. Although teaching staff of Zhanjiang will not be shaken by these leaving famous teachers, in the face of the loss of famous teachers, if suitable measures cannot be taken by government as soon as possible, there will be an inestimable “catfish effect”. When treatment is not reserved, emotional retention, career retention and development retention become more urgent and important.

## 4. Construction of Teacher Development System in Primary and Secondary Schools

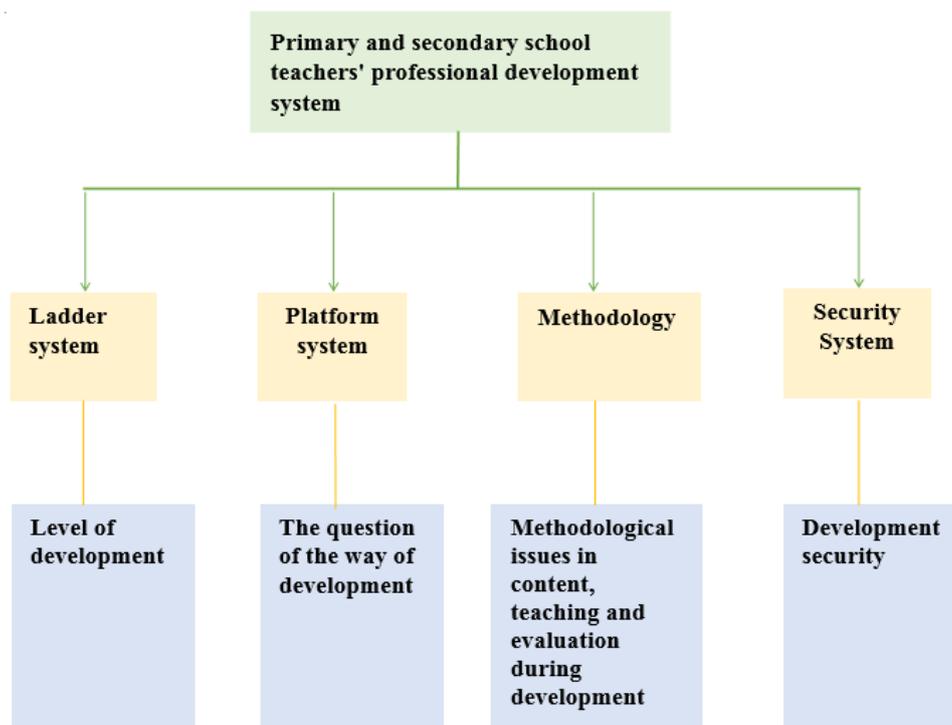


Figure 9 Professional development system for teachers in primary and secondary schools in Zhanjiang

The professional development of primary and secondary school teachers is, to some extent,

continuing education, lifelong education, and an extension of education. The construction of the development system of primary and secondary school teachers should be based on the concept of lifelong learning, build platforms, create opportunities, and protect teachers in their thinking. The three dimensions of knowledge and ability develop together. The professional development system for primary and secondary school teachers should include four organic components, namely the ladder system, platform system, method system, and guarantee system. The ladder system solves the problems of teacher professional development and the platform system solves the question of the method of dependence for development, the method system solves the method problems of content, teaching and evaluation in the development process, and the support system solves the problem of development guarantee (see Figure 9).

#### ***4.1 Ladder system: build the level of teacher professional development***

Teaching staff of Zhanjiang is relatively stable. The construction of the teaching staff should be designed with a reasonable, clear, and operable professional development level, from new teachers-teaching experts-subject leaders-backbone teachers-famous teachers, can be The city's primary and secondary school teacher development center organizes experts to formulate corresponding years, development and evaluation standards based on relevant documents in the province, so that teachers can clearly benchmark and make their own professional development plans in a planned and targeted manner.

In order to avoid making the determination of key teacher candidates random and the standards are not uniform, uniform hard indicators can be set and standards set by the disciplinary committee. For example, teachers with less than 3 years of teaching experience are so called new teachers, and teachers with more than 5 years of teaching experience can be recognized as a city-level teaching expert through written examinations and classes. 10 years of teaching experience as a market-level teaching expert can be identified as a subject leader through written tests, classes, and interviews. Subject leaders with a teaching age of 15 years or more can be identified as backbones through performance, lectures, and interviews. Teachers and subject leaders can be identified as city-level teachers based on performance and interviews without leadership groups. Only district-level teachers can participate in the evaluation of city-level teachers, and so on by one level. The one who wins the first prize of the city-level teaching ability competition, Guangdong Provincial teaching ability Contestants with first, second, and third prizes or teachers who have outstanding achievements in scientific research can directly participate in the assessment of subject leaders.

In order to set a benchmark for teachers and highlight the role of exemplary leadership, it is recommended that special teachers and senior teachers in the city be classified as high-level talents at the municipal level, and enjoy certain economic subsidies within 5-10 years, supplemented by corresponding restrictions. An important group of famous teacher teams conducts the rank system and separately inspects the professional development. It is time to carry out the "Zhanjiang Most Beautiful Teachers" selection activity, establish a model and model of the teacher team, and promote the healthy and healthy development of the teacher team.

#### ***4.2 Platform system: Play the role of integration of educational resources***

The platform system solves the problem of the way of relying on development, which is the core of the professional development of Zhanjiang primary and secondary school teachers. In a macro perspective, it plays the role of Internet +; in the middle view, it plays the positive role of the third-level primary and secondary school teacher development center in the provincial and urban areas. In a micro perspective, it plays an active role in inter-school communication.

##### ***4.2.1 Macro level: Internet +***

Internet + resources: Resources are the soul, and the core content of professional development is education and teaching resources, the purpose of which is to improve teachers' knowledge and skills through sharing. Based on the state-built free educational resource sharing platform, it can make full use of its educational resources. Rich and convenient role, comprehensively coordinate the education and teaching resources of counties and districts in the city, build a series of municipal-level educational resource sharing systems such as teacher development teacher resources, curriculum platforms and lesson exhibition platforms, and book sharing systems. Increase county counties through resource sharing. The richness and openness of the district's platform resources can realize the complementary advantages of urban and rural education and teaching resources and achieve win-win cooperation.

Internet + training: effectively integrate the three major elements of platform, resources, and services, and form a set of cloud, network, and terminal integration after linking the eight core education business such as environment, school, curriculum, teaching, learning, management, evaluation, and teacher development. a continuous service support system for continuing education. Supported by technological innovation, we will build a digital learning port for teachers, a network platform that integrates rich resources such as curriculum resources, teaching and research results, and support teachers' lifelong learning, personalized learning, and professional growth.

#### ***4.2.2 Meso level: Play the central role of three-level development center***

The function of primary and secondary school teacher development center's is to promote the professional development of teachers in the region. Therefore, the establishment of the provincial, city and urban (county) three-level primary and secondary school teacher development center system should be accelerated. Carry out special investigations and policy research around the current cooperation priorities, and serve the development of teachers in elementary and secondary schools in Zhanjiang. Under the joint meeting mechanism, regular cooperation meetings are held to improve the working mechanism and the regular meeting and consultation mechanism, and to formulate annual work goals and specific implementation plans, to strengthen daily communication and collaboration, and pragmatically promote cooperation in related fields.

#### ***4.2.3 Micro level: Inter-School Communication***

Establish an inter-school education, teaching, and teaching and research exchange system headed by various development centers, strengthen joint film research and training, and build on the three project constructions in each county and district, and let the county teachers, school principals, and class teachers improve leading, demonstrating and radiating functions, improving the school's education and teaching level, enhancing the school's overall school running level, strengthening the connection with neighboring schools, society, and parents, through the connection and communication with the outside world, drawing on the experience of others, learning from each other's strengths, and jointly improving effectively guarantee the high quality of the work carried out by the school.

In order to maintain the systematicness, stability, and durability of inter-school exchange activities, the county development center should carefully plan each event, or theoretical study, or concentrated discussion, or experience introduction, or lesson evaluation, or case exchange, as an organization. Using video observations, debates, discussions, etc., to allow teachers to improve the education level in a pragmatic, democratic, and relaxed atmosphere of teaching and research, and to discuss and exchange ideas. Establish an evaluation and incentive system for inter-school cooperation and communication. In inter-school cooperation and communication, we attach importance to process management, implement follow-up management, conduct evaluation and assessment, and continue to improve teacher participation and participation through incentive mechanisms to promote teachers to find gaps , improve ability, produce results, become famous teachers.

#### ***4.3 Method system***

The 19th National Congress of the Communist Party of China put forward the strategic requirements of "improving lifelong education and establishing a learning society" and the great goal of "basically forming a learning society by 2020".

Empowerment and development center, focusing on strengthening after-service training. In terms of methods, in order to promote the professional development of primary and secondary school teachers, the function of the three-level development center should be actively played to empower and empower the city and county-level development centers. Active, active and innovative shoulders the important task of the professional development of teachers in primary and secondary schools. Training and learning is the most important way in the professional development of teachers. Therefore, further rely on universities and strengthen cooperation with Lingnan Normal University to give full play to the important role of which in teacher training in Zhanjiang; by inviting in + going out, continue to innovate teacher training models; by The "Outstanding Teachers Project" play the role of leading teachers, leading teachers and class teachers in leading radiation demonstrations, and gradually train a team of training experts formed by teachers in the city. A number of high-quality schools are listed as follow-up learning bases, and they undertake training tasks each year. Strengthen teachers training course system construction, scientifically designing training courses suitable for different ladder systems according to training needs; through platform management, joint teacher colleges are engaged in post placement internships, to a certain extent, alleviating engineering contradictions, allowing more

teachers to have the opportunity to concentrate on deep learning, and By strengthening the management of the training process and adopting third-party assessments and other methods to strengthen the scientific pre-training, mid-training, and post-training monitoring and evaluation of training quality and performance. In the case of mature conditions, through the reduction of tuition and subsidies, actively promote on-the-job education master training programs, and through the promotion of academic qualifications, allow more teachers to learn systematically to better improve themselves at the same time, the use of three teacher development center, actively promote alliances among schools within each district, and actively explore the group of school education; the same time to strengthen exchanges and cooperation between local schools.

Construct a set of educational cloud platform that supports ubiquitous, large-scale, open integration. In order to better and facilitate the professional development of teachers, it is necessary to build an educational cloud platform. The cloud platform is implementing teaching plans and management models based on the integration of learning modes, learning processes, and assessment methods, various learning terminals are integrated to support the access of multiple learning terminals such as computers, mobile phones, and tablets, so that primary and secondary school teachers can learn anytime and anywhere. Primary and secondary school teachers are school construction and the mainstay of development, their voices are more representative and relevant. The platform should integrate the different types of learning needs of teachers. In the process of learning, you can ask the instructor or other peers for advice at any time to carry out virtual collaborative learning. The education cloud platform provides more open and convenient learning environment for primary and secondary school teachers to meet the needs of teachers in different disciplines, different semesters, and different professional development stages for learning and education, and to meet their diverse and personalized learning needs. Based on education theory, IOT technology and artificial intelligence, build wisdom and personality. The online and offline learning space supports and promotes deep teaching reforms such as mixed teaching in schools and flipped classrooms.

#### ***4.4 Support system: Multi-level coordination provides guarantee***

The support system for teachers' professional development needs to solve the problem of guaranteeing development. Zhanjiang's primary and secondary school teacher development system should strengthen the protection of primary and secondary school teachers' development from three aspects: mechanism support, organizational support, and dynamic support.

##### ***4.4.1 System support***

In terms of systems, first, we must steadily and steadily promote the “county-managed school employment” management system for primary and secondary school teachers; secondly, we must implement the system of primary and secondary school headmaster levels at all levels and types of schools, establish an admission system for principal qualifications, improve the mechanism for selecting and appointing principals, and promote professional development of principals; once again, establishing a regular teacher exchange system and implementing school principal-teacher exchange rotation work; finally, advancing the construction of a comprehensive teacher information management system, strengthening the supervision and monitoring of the growth of schools, principals, and teachers to cultivate high quality Teacher team. In addition, every year, in conjunction with the provincial youth teacher competence competition, a series of competitions such as village teachers' Putonghua competitions, citywide teachers' informationization ability, and other series of competitions are organized, including principals' professional development achievements display and other activities.

##### ***4.4.2 Organizational support***

In terms of organizational support, the establishment of two major organizations is necessary. The first is the establishment of a team of professional development mentors for municipal primary and secondary school teachers. Based on the teacher professional development ladder system, the use of backbone teachers, famous teacher workshop hosts, outstanding retired teachers, and a group of An expert team formed by university experts establishes a teacher development guidance system, giving full play to the role of mentoring, guidance, demonstration, and radiation of the tutor team. At the same time, it focuses on practical results and conducts various forms of research on teacher growth needs. The second is construction. Supporting high-end academic teams composed of teaching and research staff, university teachers, and full-time teachers from the development center scientifically evaluate the professional development of primary and secondary school teachers, pay attention to teachers' professional performance, professional experience and sustainable development of professional

abilities, and jointly undertake major issues in teacher education. And help primary and secondary school teachers sort through, publish, and publish influential academic results.

#### **4.4.3 Power support**

In terms of motivation support, the municipal government should, on the one hand, establish a positive image of respect for teachers and educate, and hire special-grade teachers and senior teachers in the city as high-level talents to exert their spiritual motivation; on the other hand, invest funds and the municipal party committee and city The government takes the lead in organizing and studying the strategic needs of education development in Zhanjiang Bay, forming a cross-border, cross-disciplinary, and interdisciplinary teacher professional development and research alliance, integrating intelligence to create a modern demonstration zone for teacher professional development; focusing on creating high-end think tanks for basic education in Zhanjiang, and Teachers' professional development carried out "full chain" systematic research, accurately "signaled" the needs of the construction of teachers in different regions, provided policy advice and decision-making reference, and helped Zhanjiang's teacher education move steadily.

## **5. Conclusion**

Starting with new teachers who have just started, in the process of primary and secondary school teacher professional development, facing different stages of teacher professional development, they have different development foundations and conditions, have different development goals and requirements, and face different difficulties. Teachers of future schools not only need teachers who integrate professional thought, professional knowledge and professional ability, but also need solid technical knowledge and improve practical wisdom, but also need self-development motivation and reflection and positioning on educational beliefs. Zhanjiang's professional development system for primary and secondary school teachers leads the growth of teachers, which is not only the current status of the professional development of primary and secondary school teachers, but also the future education period.

## **Acknowledgement**

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3) Lingnan Normal University Humanities and Social Science Research project "Study on Classroom Teaching Reform of Middle School under BYOD Environment (No: ZW1806)

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