

## Digital Leadership Development Model for School Administrators in Guangdong

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### Abstract

The objectives of this research were 1) to explore the current situation of Digital leadership development model for school administrators in Guangdong, 2) to propose a Digital leadership development model for school administrators in Guangdong, and 3) to evaluate the suitability and feasibility of Digital leadership development model for school administrators in Guangdong. There were 5 following aspects: 1) Digital vision and rule model, 2) Digital communication, 3) Digital Knowledge and skills, 4) Environmental administration and digital networking, and 5) Digital calculate creation. The sample group in this research was 285 administrators and teachers from schools in Guangdong. The Interview group was 24 school administrators. The research instruments were document analysis, questionnaire, structured interview, and evaluation form. The statistics to analyze the data were percentage, mean, standard deviation, and content analysis.

The results found that 1) the current situation of digital leadership development model for school administrators in Guangdong in five aspects was at a medium level. Considering the results of this research aspects ranging from the highest to lowest level were as follows: the highest mean was Digital calculate creation, followed by Environmental administration and digital networking, and Digital vision and rule model was the lowest mean. 2) The model for digital leadership development for school administrators in Guangdong includes 5 aspects, with a total of 25 measures: 1) 5 measures for Improving Digital vision and rule model, 5 measures for disseminating Digital communication, 5 measures for promoting Digital Knowledge and skills, 5 measures for optimizing Environmental administration and digital networking, and 5 measures for supporting Digital calculate creation. 3) The suitability and feasibility of the Digital leadership development model for school administrators in Guangdong in 5 aspects were at the highest level.

**Keywords:** Model for Development, Digital Leadership, School Administrators

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## Introduction

As the wave of digitization ushers in the full-scale digitization of the society and economy, digitization affects every aspect of the school. From school facilities to the digital management of schools. School Administrators must be aware that, firstly, today's work has changed; secondly, they must adapt to globalization; and thirdly, students have become the "new" learners. In the book *Beyond Simple Answers: New Leadership Practices for the Digital Age* by the American educator Baumanns, it is stated that Administrators must answer two questions: "What am I prepared to do to change all aspects of my school", and "How can I accomplish more in less time? ". Digital leadership can be seen as an effective tool for school reform today. The book also mentions that "digital leadership is used as a framework to initiate a culture of great change that can ultimately transform schools." (Chen Yundi, 2003)

With the arrival of the Education Informatization 2.0 era, China has entered the highway of education informatization development, and the Party Central Committee and the State Council have proposed in China Education Modernization 2035 "to accelerate the educational changes in China's informatization era through the construction of intelligent campuses and the integration of teaching and learning service platforms and other measures." The Education Informatization 2.0 Action Plan states that "school leaders should serve as the school's chief information officer and carry out overall planning for the development of school education digitization." As the helmsman of realizing the rapid development of digitalization in basic education schools, whether the principal can make his/her school build a standard digital campus, whether he/she can identify problems in the implementation of education digitalization in a timely manner, and whether he/she possesses strong digital literacy and digital leadership, etc., have all put forward more new tests for the current Administrators. (Shouxuan Yan and Yun Yang., 2021)

In March 2019, the Ministry of Education issued the *Opinions on the Implementation of the National Project on Enhancing the Information Technology Application Ability of Primary and Secondary School Teachers 2.0* (hereinafter referred to as the *National Project on Enhancing the Information Technology Application Ability of Primary and Secondary School Teachers 2.0*), which suggests that "the digital leadership of school Administrators should be continuously improved, so as to promote the integration and innovative development of information technology and teaching. "In addition, in recent years, the national level, in light of the current situation of the digital development of education in China, has put forward a number of new initiatives to improve the digital leadership of Administrators, such as the introduction of the 2014 version of the *Digital Leadership Standards for Primary and Secondary School Administrators (for Trial Implementation)*. (The Ministry of Education of the People's Republic of China (MOE), 2016)

Guangdong, located in the south of China and neighboring Hong Kong and Macao, is a relatively developed province in terms of educational resources and industrial development. Most Administrators in Guangdong have recognized the importance of the digital era and have gradually begun to pay attention to the impact of digital technology on education, and have made efforts to explore the application of digital education and actively explore the development of digital leadership. They actively promote the construction of digital campuses and improve the digitalization level of

schools. They also pay attention to the development and application of digital teaching resources, actively explore the organic combination of digital education and humanistic care, the education model in the digital era and the cultivation of students' quality by digital education, and strive to apply digital education in school management and teaching to provide students with a more convenient and efficient way of learning, so that students in the get a comprehensive education in the digital era. Located in the center of Xiashan District, Zhanjiang City, Guangdong, Marina School is a private primary education school with excellent teaching quality, high social recognition and strong influence. I have been working at Binhai School since 2020 and served as the principal. According to the National Teachers' Information Technology Application Ability Enhancement 2.0 Project issued by the Ministry of Education, the school has been elected by the Municipal Bureau of Education as a pilot school in the city and assumed the municipal research topic of "Integration of Information Technology and Disciplines", the school relies on the support of the policy, responds to the call for the digital construction of the national education level, and carries out the work of enhancing the application ability of information technology in a comprehensive manner. (Lei Lihua, Zhang Zishi, Jin Yifu, 2021)

As an administrator of Binhai School in Xiashan District, Zhanjiang City, Guangdong, I should find out how to help our school improve the level of digital management and achieve better development. In response to the above problems, I often discuss with the managers of related schools, constantly consult the literature, learn the relevant theoretical knowledge, and analyze the management strategies of other schools. After continuous learning and thinking, I realized that to achieve the goal of digital campus and digital teaching, we must formulate a supporting management strategy for digital development, and cultivate the digital leadership of leading cadres, such as (Digital vision and rule model, Digital communication, Digital Knowledge and skills, Network environmental administration and digital networking, Digital calculate creation). It is clear that digital leadership ability is the "hand" of leadership level and work quality, promote leading cadres to establish a correct view of performance, cultivate a group of scientific, innovative, digital, dare to bear the leadership cadres, cohesion to form a strong digital leadership of innovation and entrepreneurship in the digital era. (Yan Jingjing, 2018)

On this basis, I decided to conduct a study on "Digital leadership development model for school administrators in Guangdong". Based on the theory of digital leadership, this study analyzes the current situation, problems and influencing factors of digital leadership of school Administrators in Guangdong through questionnaire surveys, interviews and other research methods, applies statistical analysis techniques, and proposes a guideline for building digital leadership of school Administrators in Guangdong, and evaluates the feasibility of the proposed guideline, in order to provide theoretical and practical basis for assisting in the building of digital leadership of school Administrators in Guangdong. The feasibility of the proposed guidelines will be evaluated to provide theoretical and practical basis for the construction of digital leadership for Administrators in Guangdong.

## Objectives

1. To explore the current situation of Digital leadership development model for school administrators in Guangdong.
2. To propose a Digital leadership development model for school administrators in Guangdong.
3. To evaluate the suitability and feasibility of Digital leadership development model for school administrators in Guangdong.

## Scope of the Research

### 1. Scope of Content

#### 1.1 Concept leadership

#### 1.2 Concept of Digital Leadership

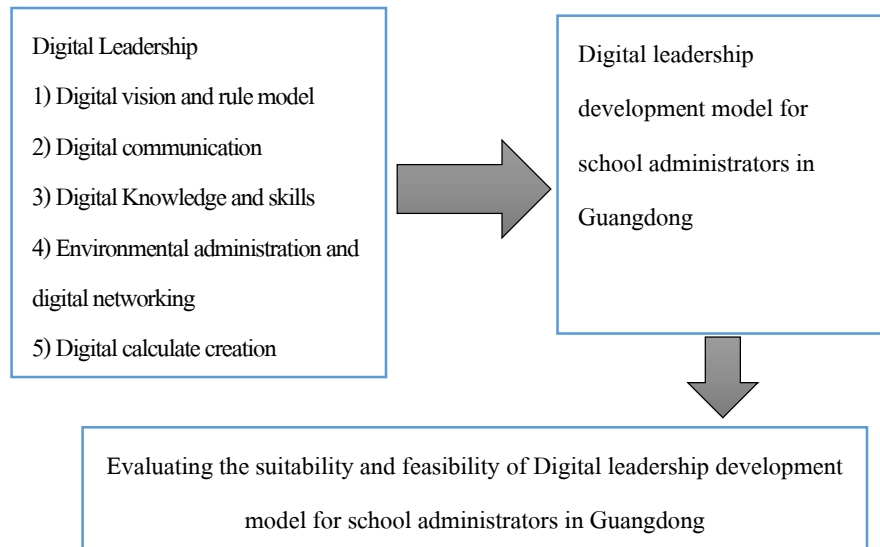
### 2. Scope of Population

2.1 To analyze the current situation of information leadership of middle-level administrators at universities in Guangxi. The population included 1,100 Administrators and teachers in Private school education or management in Guangdong. According to the sampling table of population, the sample group of this research was 285 administrators and teachers from 12 universities in Guangxi.

2.2 To propose a Digital leadership development model for school administrators in Guangdong. The interviewees of this research were 24 school Administrators from Guangdong. The qualifications of interviewees are as follows: 1) Administrators from Guangdong who have been engaged in school management for more than five years; 2) they are familiar with the operation mode of digital management and have a deep understanding of school digitalization; 3) they must be willing to participate in the recorded semi-structured interviews; and 4) they must be willing to review the transcripts of their interviews for validation purposes.

2.3 To evaluate the suitability and feasibility of Digital leadership development model for school administrators in Guangdong. The experts for evaluation of the suitability and feasibility of Digital leadership development model for school administrators were 15 administrators in Guangdong. The qualifications of the experts are as follows: 1) administrators who have been engaged in the management of informatization or mathematization for more than 5 years; 2) coming from different schools; 3) having senior titles with deep understanding and research on digital leadership work.

## Research Framework



**Figure 1** Research Framework

## Research Methodology

**Phase 1:** To explore the current situation of Digital leadership development model For school administrators in Guangdong.

**Phase 2:** To propose a Digital leadership development model for school administrators in Guangdong.

**Phase 3:** To evaluate the suitability and feasibility of Digital leadership development model for school administrators in Guangdong.

This research is mixed methods research. The research method is divided into 3 steps as follows

**Phase 1:** To explore the current situation of Digital leadership development model For school administrators in Guangdong.

### **The population / Sample Group**

The population included 1,100 administrators and teachers from 12 schools in Guangdong. According to the sampling table of population, the sample group of this research was 285 administrators and teachers from 12 schools in four regions of Guangdong. Determining the number of samples according to the table of Krejcie and Morgan (Krejcie & Morgan, 1970) and by using stratified random sampling.

### **Research Instruments**

The instrument to collect the data for objective one, to analyze the current situation of information leadership of middle-level administrators at universities in Guangxi was a questionnaire. The questionnaire was designed based on information leadership in 5 following aspects: 1) Digital vision and rule model, 2) Digital communication, 3) Digital

Knowledge and skills, 4) Environmental administration and digital networking, and 5) Digital calculate creation. The questionnaire has a reliability value of 0.950.

#### **Data Collection Method**

The researcher requested a requirement letter from the graduate school , Bansomdejchaopraya Rajabhat University for collecting the data from 285 administrators and teachers from 12 schools in Guangdong. A total of 285 questionnaires with 100 percent.

#### **Data Analysis**

The current situation of the information leadership of middle-level administrators at universities in Guangxi in four following aspects: 1) Digital vision and rule model, 2) Digital communication, 3) Digital Knowledge and skills, 4) Environmental administration and digital networking, and 5) Digital calculate creation, was analyzed by Mean and standard deviation.

**Phase 2:** To propose a Digital leadership development model for school administrators in Guangdong.

#### **The Key informant**

The interviewees in this research were 24 school administrators at school in Guangdong, who were selected by purposive Sampling. The qualifications of interviewees are as follows: 1) administrators from Guangdong who have been engaged in school management for more than five years; 2) they are familiar with the operation mode of digital management and have a deep understanding of school digitalization; 3) they must be willing to participate in the recorded semi-structured interviews; and 4) they must be willing to review the transcripts of their interviews for validation purposes.

#### **Research Instruments**

The instrument to collect the data for objective two, to propose a Digital leadership development model for school administrators in Guangdong was a structured interview. The structured interview was designed based on the current situation of Digital leadership development model for school administrators in Guangdong in 5 following aspects: 1) Digital vision and rule model, 2) Digital communication, 3) Digital Knowledge and skills, 4) Environmental administration and digital networking, and 5) Digital calculate creation.

#### **Data Collection Method**

The researcher requested a requirement letter from the graduate school, Bansomdejchaopraya Rajabhat University requiring interviewing administrators from 12 universities in Guangdong. The researcher interviews the administrators one by one through an online platform or face-to-face depending on the interviewee's convenience.

#### **Data Analysis**

The structured interview about the Digital leadership development model for school administrators in Guangdong was analyzed by content analysis.

**Phase 3:** To evaluate the suitability and feasibility of Digital leadership development model for school administrators in Guangdong.

### The Key informant

The experts for evaluating the suitability and feasibility of Digital leadership development model for school administrators in Guangdong were 15 school administrators in Guangdong. The qualifications of the experts are as follows: 1) administrators who have been engaged in the management of informatization or mathematization for more than 5 years; 2) coming from different schools; 3) having senior titles with deep understanding and research on digital leadership work.

### Research Instruments

The instrument to collect the data for objective three, to evaluate the suitability and feasibility of Digital leadership development model for school administrators in Guangdong was an evaluation form. The evaluation form was designed based on the Digital leadership development model for school administrators in Guangdong in 5 following aspects: 1) Digital vision and rule model, 2) Digital communication, 3) Digital Knowledge and skills, 4) Environmental administration and digital networking, and 5) Digital calculate creation.

### Data Collection Method

The researcher requested a requirement letter from the graduate school to invite the expert to evaluate the model. The researcher distributed the evaluation form to administrators. A total of 15 evaluation forms.

### Data Analysis

Data analysis in this research, the researcher analyzes the data by package program, as follows: the evaluation of the suitability and feasibility of Digital leadership development model for school administrators in Guangdong is analyzed by Mean and standard deviation.

## Research Findings

1. The analysis results about the current situation of Digital leadership development model for school administrators in Guangdong.

**Table 1** Mean and standard deviation of the current situation of Digital leadership development model for school administrators in Guangdong in five aspects

|   | Academic affairs management                         | $\bar{X}$   | S.D         | level         | Order |
|---|-----------------------------------------------------|-------------|-------------|---------------|-------|
| 1 | Digital vision and rule model                       | 3.21        | 1.07        | Medium        | 5     |
| 2 | Digital communication                               | 3.30        | 1.16        | Medium        | 4     |
| 3 | Digital Knowledge and skills                        | 3.30        | 1.12        | Medium        | 3     |
| 4 | Environmental administration and digital networking | 3.34        | 1.02        | Medium        | 2     |
| 5 | Digital calculate creation                          | 3.35        | 0.97        | Medium        | 1     |
|   | <b>Total</b>                                        | <b>3.30</b> | <b>1.06</b> | <b>Medium</b> |       |

According to Table 1, the current situation of Digital leadership development model for school administrators in Guangdong in five aspects was at a medium level ( $\bar{x} = 3.30$ ). Considering the results of this research aspects ranging from the highest to lowest level were as follows: the highest mean was Digital calculate creation ( $\bar{x} = 3.35$ ), followed by Environmental administration and digital networking ( $\bar{x} = 3.34$ ), and Digital vision and rule model was the lowest mean ( $\bar{x} = 3.21$ ).

Digital vision and rule model was at a medium level. The results of the research aspect ranging from the highest to lowest level were as follows: the highest mean was that digital video can be processed, edited, and played back on a variety of platforms, including computers and mobile devices, the following is that digitized video has high image quality and accuracy, and rule models can be derived based on expert knowledge, statistics, domain experience. was the lowest mean.

Digital communication was at a medium level. The results of the research aspects ranging from the highest to lowest level were as follows: the highest level was digital communication is a type of communication that affects people's lives and learning, followed by digital communication has the characteristics of high reliability and is widely used in telephone, internet, mobile, satellite communication and other areas, and common terms in digital communications include error control was the lowest mean.

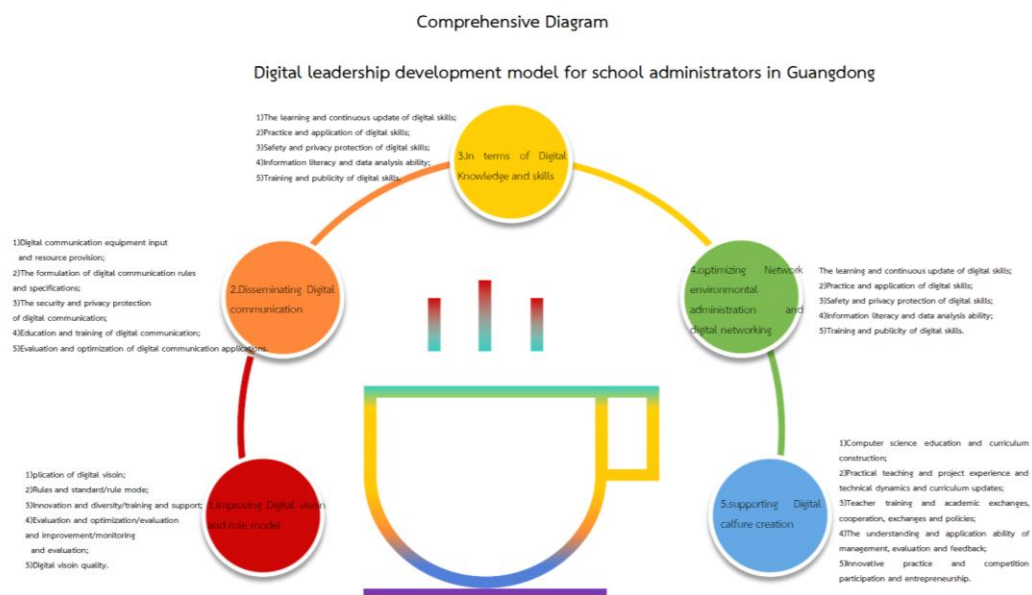
Digital Knowledge and skills were at a medium level. The results of this research aspects ranged from the highest to lowest level as follows: the highest level was that digital skills are of great significance to individuals in education, career development and life, and in addition to improving efficiency and creating value, followed by digital skills enhance an individual's practical ability to apply and use digital tools, technologies and resources in a digital environment, and Universities have a perfect management mechanism for the integration of education and industry was the lowest mean.

Environmental administration and digital networking were at a medium level. The results of this research aspects ranged from the highest to lowest level as follows: the highest level was that digital skills enhance an individual's practical ability to apply and use digital tools, technologies and resources in a digital environment, followed by digital networks as a way to resource sharing, and the object of network environment management is the digital network was the lowest mean.

Digital calculate creation was at a high level. The results of this research aspects ranged from the highest to lowest level as follows: the highest level was that the development of digital computing can include computer science skills, followed by simple arithmetic can be performed using digital computing, and in the process of creating digital computing, it is necessary to create an appropriate design was the lowest mean.

2. The model for digital leadership development for school administrators in Guangdong includes 5 aspects, with a total of 25 measures: 1) 5 measures for Improving Digital vision and rule model, 5 measures for disseminating Digital communication, 5 measures for promoting Digital Knowledge and skills, 5 measures for

optimizing Environmental administration and digital networking, and 5 measures for supporting Digital calculate creation, shown as figure 1.



**Figure 1** The model for digital leadership development for school administrators in Guangdong

2.1 Improving Digital vision and rule model includes: 1) Application of digital vision; 2) Rules and standard/rule mode; 3) Innovation and diversity/training and support; 4) Evaluation and optimization/evaluation and improvement/monitoring and evaluation; 5) Digital vision quality.

2.2 Disseminating Digital communication includes: 1) Digital communication equipment input and resource provision; 2) The formulation of digital communication rules and specifications; 3) The security and privacy protection of digital communication; Education and training of digital communication; 5) Evaluation and optimization of digital communication applications.

2.3 Promoting Digital Knowledge and skills includes: 1) The learning and continuous update of digital skills; 2) Practice and application of digital skills; 3) Safety and privacy protection of digital skills; 4) Information literacy and data analysis ability; 5) Training and publicity of digital skills.

2.4 Optimizing environmental administration and digital networking includes: 1) Network planning and architecture design; 2) Network security management; Network resource utilization and management; 4) Digital education and innovation practice; 5) Implement the green network plan and environmental impact.

2.5 Supporting Digital calculate creation includes: 1) Computer science education and curriculum construction; 2) Practical teaching and project experience and technical dynamics and curriculum

updates; 3) Teacher training and academic exchanges, cooperation, exchanges and policies; 4) The understanding and application ability of management, evaluation and feedback; 5) Innovative practice and competition participation and entrepreneurship.

3. Evaluate the suitability and feasibility of the models for digital leadership development for school administrators in Guangdong, shown in Table 2

**Table 2** Mean and standard deviation of the evaluation of the suitability and feasibility of the models for digital leadership development for school administrators in Guangdong in 5 aspects

| Guidelines                                            | Suitability |             |                | Feasibility |             |                |
|-------------------------------------------------------|-------------|-------------|----------------|-------------|-------------|----------------|
|                                                       | $\bar{X}$   | S.D         | Level          | $\bar{X}$   | S.D         | Level          |
| 1 Digital vision and rule model                       | 4.60        | 0.29        | highest        | 4.59        | 0.23        | highest        |
| 2 Digital communication                               | 4.63        | 0.24        | highest        | 4.68        | 0.24        | highest        |
| 3 Digital Knowledge and skills                        | 4.64        | 0.19        | highest        | 4.71        | 0.20        | highest        |
| 4 Environmental administration and digital networking | 4.69        | 0.24        | highest        | 4.69        | 0.26        | highest        |
| 5 Digital calculate creation                          | 4.71        | 0.23        | highest        | 4.72        | 0.22        | highest        |
| <b>Total</b>                                          | <b>4.65</b> | <b>0.17</b> | <b>highest</b> | <b>4.68</b> | <b>0.14</b> | <b>highest</b> |

According to Table 2, the suitability of models for digital leadership development for school administrators in Guangdong in 5 aspects was at the highest level. Considering the results of this research aspects ranging from the highest to lowest level were as follows: the highest level was Digital calculate creation, followed by Environmental administration and digital networking, and Digital vision and rule model was the lowest level.

The feasibility of models for digital leadership development for school administrators in 5 aspects was at the highest level. Considering the results of this research aspects ranging from the highest to lowest level were as follows: the highest level was Digital calculate creation, followed by Digital Knowledge and skills and Digital vision and rule model was the lowest level.

## Conclusion

1. The current situation of digital leadership development model for school administrators in Guangdong in five aspects was at medium level. Considering the results of this research aspects ranged from the

highest to lowest level were as follow: the highest level was Digital calculate creation, followed by Network environmental administration and digital networking, Digital Knowledge and skills, and Digital vision and rule model was the lowest level.

2. The models for digital leadership development for school administrators in five aspects, which contain 25 measures. There are 5 measures for Improving Digital vision and rule model, 5 measures for disseminating Digital communication, 5 measures for promoting Digital Knowledge and skills, 5 measures for optimizing Environmental administration and digital networking, and 5 measures for supporting Digital culture creation.

3. The suitability and feasibility of models for digital leadership development for school administrators in Guangdong in five aspects were at highest level with the values between 4.00 and 5.00, which means the models for digital leadership development for school administrators in Guangdong are suitability and feasibility.

## Discussion

1. The current situation of digital leadership development for school administrators in Guangdong in 5 aspects was at a medium level. Considering the results of this research aspects ranging from the highest to lowest level were as follows: the highest level was Digital calculate creation, followed by Environmental administration and digital networking, and Digital vision and rule model was the lowest level. After investigation and research, the administrative staff of the Guangdong Provincial School performed well in digital leadership. Digital computing is optimal, while digital vision and rules still have room for improvement. In response to this situation, it is recommended that the school administrative staff strengthen the learning and application of digital vision and rules models to further improve the level of digital leadership, which can better meet the needs of digital education management and promote the process of digital transformation in schools. The following research results are basically consistent: the rapid development of digital technology has put forward new challenges and opportunities in the field of education. As the core force of school management, the school's administrative staff must have a high level of digital leadership in order to meet the needs of future education development. This is related to the research of Bian Qi, Tian Zhenqing and Wang Junping. (2016). Analysis of the current situation and countermeasures of digital leadership of primary and secondary school Administrators-Taking Inner Mongolia region as an example; The improvement of digital visual and rule models is the direction that the current school administrative personnel need to pay attention to and strengthen, which will help improve school management efficiency and improve the quality of education. The excellent performance of school administrators in digital computing is the solid foundation of the school's digital transformation, but it still needs to pay attention to the improvement of digital vision and rule models to comprehensively improve the level of digital leadership.

2. The models for digital leadership development for school administrators in Guangdong include 5 aspects, a total of 25 measures: 1) 5 measures for Improving Digital vision and rule model, 2) 5 measures for disseminating Digital communication, 3) 5 measures for promoting Digital Knowledge and skills, 4) 5 measures for optimizing environmental administration and digital networking, and 5) 5 measures for supporting Digital calculate creation. This may be because the measures are important for the models for digital leadership development for school administrators in Guangdong. Especially regarding school administrators was actively promote the application of digital visions in schools, provide rich and intuitive learning experience, incorporate education strategies, clarify its positioning, and provide diversified learning resources and educational tools; Strengthen the investment in digital communication equipment, including various hardware equipment and software platforms to provide better communication conditions; Support school management to actively learn and master digital knowledge through education, training and practical operations, and encourage continuous learning and updating digital knowledge to adapt to the changing technical environment; Establish a comprehensive network planning, architecture design and management strategies, and build an efficient network architecture and digital resource co -construction and sharing; and Investment resources Establish a stable, efficient, safe infrastructure and teaching system, including the construction of basic curriculum construction, educational goals, improvement of education quality, and targets and positioning of digital computing to support digital computing. This is related to Su Lineng (2019) emphasized aspects of building infrastructure and teaching and learning systems, enhancing the value of practical teaching and learning, providing training and exchange opportunities for teachers, enhancing the understanding and application of computer science by school management, and encouraging teachers and students to engage in innovation in the context of digital computing education.

3. The suitability and feasibility of the of models for digital leadership development for school administrators in Guangdong in 5 aspects were at the highest level. Considering the results of this research aspects ranging from the highest to lowest level were as follows: the highest level was Digital calculate creation. Especially regarding school administrators was the goal of digital computing creation is to master the basics of computer science, including knowledge of data structures, algorithms, design and analysis, programming languages, and so on. design and analysis, and programming languages. Understanding these fundamentals can help us better understand and apply the principles and techniques of digital computing. Continuously learn and update technical knowledge, cultivate problem solving and innovation ability, and be good at analyzing and solving difficulties encountered in digital computing. At the same time, we should encourage innovative thinking and be willing to try new ideas and methods to enhance the efficiency and value of digital computing through innovation. This is related to the research of Cui Haitao, Li Chunyan (2019) study for research on the principal's digital leadership promotion strategy based on the perspective of the competent authorities; Focus on teamwork and communication skills and promote responsibility and ethical awareness. The creation of Digital Calculus

requires that through these recommendations, will be able to better carry out the creation of Digital Calculus and bring more value and innovation to education, business and society. In this context, supporting the applicability and feasibility of Digital calculate creation becomes particularly important.

## Recommendations

### Recommendations in implementation

1. Digital vision and rule model; Enhancing the application of expert knowledge and experience: school administrators can enhance the collection and collation of expert knowledge and experience to ensure that it is adequately applied in the development process of rule model. This includes collaborating with experts in related fields to gain a deeper understanding of the domain characteristics and extract valuable rules and models.

2. Digital communication: Education and training: school administrators can promote education and training in the field of digital communications, especially regarding common terminology and error control. Provide clear and easy-to-understand teaching materials and training courses to help practitioners and students better understand and master the relevant concepts and techniques.

3. Digital Knowledge and skills; school administrators should be making the above suggestions to improve the public's awareness of and ability to cope with privacy protection. Through a combination of measures such as education, provision of tools, reinforcement of laws and regulations, advocacy of personal responsibility and empirical research, it is possible to promote greater awareness of privacy protection and better protection of personal privacy.

4. Environmental administration and digital networking; school administrators should be determine the scope of network environment management: researchers should make it clear that the object of network environment management is digital network and define its scope and boundaries. This helps to accurately define and understand the goals and responsibilities of network environment management and avoid conceptual confusion and misunderstanding.

5. Digital calculate creation: school administrators should be Emphasize the importance of design: researchers should emphasize the importance of design in the creation of digital computing. Design is a key component that can help ensure the accuracy, efficiency, and reliability of digital computing. With proper design, the computing process can be planned and optimized in advance, thus improving the overall quality and effectiveness.

### Recommendations for further research

1. Further explore effective strategies and methods of digital teaching and learning, including teacher training, student participation and the development of teaching resources. Investigate how to improve students' learning outcomes and capacity for innovation through digital teaching and learning.

2. Digital assessment and monitoring Study the evaluation and monitoring methods of digital leadership to understand the impact of digital leadership on school management and education quality. Investigate how to promote the development and optimization of digital leadership through effective evaluation and monitoring.

3. Explore innovative models of digital campus management and services, including digital resource management, information decision support, and intelligent campus construction. Investigate how to improve school management efficiency and service quality through digital campus management and services.

4. Investigate the impact and support of digital leadership on teachers' professional development. Explore the relationship between digital leadership and teachers' professional development, and study how to promote teachers' professional growth and innovation ability through digital leadership.

5. Investigate the docking and integration of digital leadership and school development strategies. Investigate how digital leadership supports school development goals, planning and implementation, and how digital leadership can be integrated into the overall school development strategy.

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