STRATEGIES FOR DEVELOPING INFORMATION LEADERSHIP FOR PRINCIPAL OF HIGH SCHOOL IN GUANGXI

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ABSTRACT

The objectives of this study were 1) To study the current situation of information leadership for principal of high school in Guangxi 2) To develop strategies for information leadership for principal of high school in Guangxi, and 3) To evaluate the suitablity and feasibility strategies for developing information leadership for principal of high school in Guangxi. The sample group of this study were 159 Guangxi high school principals, and the focus discussion group is 14 people. The instruments of this research include 1) Questionnaire survey, 2) focus group discussions, and 3) Statistical data for analyzing the data are frequency, percentage, mean, standard deviation, and content analysis.

The results showed that 1) The current status of information leadership for principal of high school in Guangxi is high, 2) Strategies developing information leadership for principal of high school in Guangxi, which is divided into 5 aspects and contains a total of 40 measures. There are 5 strategies to promote vision, 12 strategies to promote leader characteristics, 8 strategies to promote environmental factors, 8 strategies to Developing teamwork ability, and 7 strategies to Elevate data-driven decision support, and 3) The suitability and feasibility of strategies for information leadership for developing principal of high school in Guangxi are at a high level.

Keywords: Strategies for developing, Information Leadership, Principal

ชื่อเรื่อง **กลยุทธ์การพัฒนาภาวะผู้นำด้านสารสนเทศสำหรับผู้อำนวยการโรงเรียนมัธยมในมณฑลกวางสี**
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บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์ 1) เพื่อศึกษาสภาพปัจจุบันของภาวะผู้นำด้านสารสนทศสำหรับผู้อำนวยการโรงเรียนมัธยมในมณฑลกวางสี 2) เพื่อเสนอแนวทางการพัฒนาภาวะผู้นำด้านสารสนเทศสำหรับผู้อำนวยการโรงเรียนมัธยมในมณฑลกวางสี และ 3) เพื่อประเมินความเหมาะสมและความเป็นไปได้ของแนวทางการพัฒนาภาวะผู้นำด้านสารสนเทศสำหรับผู้อำนวยการโรงเรียนมัธยมในมณฑลกวางสี กลุ่มตัวอย่างที่ใช้ในการวิจัยครั้งนี้ ได้แก่ ผู้อำนวยการโรงเรียนมัธยมในมณฑลกวางสี รวมทั้งสิ้น 159 คน ผู้ให้ข้อมูลสำหรับการสนทนากลุ่ม ได้แก่ ผู้อำนวยการโรงเรียนมัธยม รวมทั้งสิ้น 14 คน เครื่องมือที่ใช้ในการวิจัย ได้แก่ แบบสอบถาม แบบสนทนากลุ่ม และแบบประเมิน สถิติที่ใช้ในการวิจัย ได้แก่ ค่าร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และการวิเคราะห์เนื้อหา

ผลการวิจัยพบว่า 1) สภาพปัจจุบันของภาวะผู้นำด้านสารสนเทศสำหรับผู้อำนวยการโรงเรียนมัธยมในมณฑลกวางสี โดยภาพรวมอยู่ในระดับสูง 2) แนวทางการพัฒนาภาวะผู้นำด้านสารสนเทศสำหรับผู้อำนวยการโรงเรียนมัธยมในมณฑลกวางสี ประกอบด้วย 5 ด้าน รวมทั้งสิ้น 40 มาตรการ ได้แก่ กลยุทธ์ในการส่งเสริมวิสัยทัศน์ จำนวน 5 มาตรการ กลยุทธ์ในการส่งเสริมคุณลักษณะของผู้นำ จำนวน 12 มาตรการ กลยุทธ์ในการส่งเสริมปัจจัยด้านสิ่งแวดล้อม จำนวน 8 มาตรการ กลยุทธ์เพื่อพัฒนาความสามารถในการทำงานเป็นทีม จำนวน 8 มาตรการ กลยุทธ์ในการสนับสนุนการตัดสินใจที่ขับเคลื่อนด้วยสารสนเทศ จำนวน 7 มาตรการ 3) ผลการประเมินความเหมาะสมและความเป็นไปได้ของแนวทางการพัฒนาภาวะผู้นำด้านสารสนเทศสำหรับผู้อำนวยการโรงเรียนมัธยมในมณฑลกวางสี อยู่ในระดับสูง

คำสำคัญ: แนวทางการพัฒนา ภาวะผู้นำด้านสารสนเทศ ผู้อำนวยการโรงเรียนมัธยมในกวางสี

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Chapter 1
Introduction

Rationale

The international community attaches great importance to information education and its leadership. Information is the trend of development in the world today and the trend of social development. The level of information has become an important indicator to measure a country's modernization level and comprehensive national strength. Today's society in various countries requires all industries, especially the digital transformation of education, to make full use of digital means to improve the digital literacy of the whole people, and to promote educational transformation in an all-round way from the h8 of national strategy (Zhao Zhangjing & Zhang Shan, 2022, p.6). In 2015, the U.S. Department of Education released the latest round of the National Education Technology Plan (National Education Technology Plan, referred to as "NETP"), titled "Learning for the Future: Reimagining the Role of Technology in Education". "Leadership" is 1 of the 5 major themes, and it is explained in detail from 4 aspects: oriented to future leaders, oriented to future areas of concern, implementation is the key, technology budget and fundraising. The goal of education information leadership is clarified: to embed the concept of technology-enabled education into the roles and responsibilities of education leaders at all levels, and to drive national, regional and local visions for technology in learning (National Education Technology Plan , 2015, p.12) With the influx of tablet computers in the education field, information technology based on learning analysis will completely change the original education model (Molenaar I, 2016, p.51). Students in the 28 EU member states mainly use computers and smart ph1s to study with digital technology devices at home. More than 90% of students can use computers at home (Zhang Ju, 2019, p.31). As predicted by Pulley (2002), a researcher at the "Creative Leadership Center" of Xerox Corporation in the United States: "In the 20s and 30s of the 21st century, people will no longer need to add E before information leadership, because the leadership at that time Leadership is information-based leadership (E-leadership).

To sum up, developed countries in Europe and the United States have issued corresponding policies and regulations on the protection of educational information, and also have corresponding policies to ensure the construction of educational information infrastructure, and have also issued corresponding standards for the use of education information. Leadership is also involved, indicating that international The society has also implemented guiding policies and guidelines for information education and information leadership.

The Chinese government's guidance on the leadership of principals' information. With the comprehensive penetration of information technology in the field of education, schools have undergone tremendous changes in teaching content, methods, models, management, and concepts. School information construction has become The only way to modern education. In the "10-Year Development Plan for Education Information", the concept of "information leadership" in school education was first proposed, and the role of information leadership in the development of school information has gradually attracted atention (Ministry of Education, 2019, p.32). The purpose of the "Primary and Primary School Principals' Information Leadership Standards (Trial)" is to comprehensively improve primary and secondary school principals' information leadership, promote the deep integration of information technology and education and teaching, and accelerate the pace of basic education information (Ministry of Education, 2014, p.21). The notice of the "Education Information 2.0 Action Plan" mentioned that it is necessary to carry out in-depth information leadership training for principals, and comprehensively improve the information literacy of school managers at all levels and types (Ministry of Education, 2018, p.67). "Opinions on Comprehensively Deepening the Reform of Teacher Team Construction in the New Era", the document clearly stated that "the principal's 'National Training Program' should be implemented for all primary and secondary school principals, and comprehensively improve the principal's ability to run schools under the conditions of information" (Central Committee of the Communist Party of China State Department, 2018). "Opinions on the Implementation of the National Primary and Secondary School Teachers' Information Technology Application Ability Improvement Project 2.0", pointed out that the overall development goal of "

3 upgrades and 1 comprehensive" is to be achieved. Among the 3 upgrades, the principal's information leadership will be improved, and the final comprehensive promotion of information technology and the integration and innovative development of education and teaching (Ministry of Education, 2019, p.18). "China's Education Modernization 2035" focuses on the deployment of 10 strategic tasks for educational modernization, the 8h of which is to accelerate the education reform in the information age, and the principal is precisely the leader and helm of the education information age (the Central Committee of the Communist Party of China, State Department, 2019, p.43). The purpose of the "National Smart Education Public Service Platform Access Management Specification (Trial)" is to accelerate the digital transformation of education and promote the high-quality development of education. The main unit of digital transformation is the school, and the main person in charge of the school is the principal (Ministry of Education, 2022, p.109). The Chinese government has fully demonstrated the Chinese government's emphasis on the improvement of principals' leadership in information through policy support, resource investment in training and policy guarantees, cooperation between colleges and universities, and evaluation and assessment of information education. These measures aim to promote the construction of school information, improve the quality of education, and adapt to the educational needs of the information age.

Guangxi education urgently needs the leadership of principals to lead information. Mr. Tao Xingzhi said: "The principal is the soul of a school." School construction is a systematic and complex project, which needs to create various necessary conditions, among which the leadership Relevant ability and literacy are the premise and key. In 2020, the Guangxi Zhuang Autonomous Region government approved 54 impoverished counties including Rongshui, Napo, and Luocheng, 106 counties (cities, districts) for poverty alleviation and development tasks, and 5,379 impoverished villages (Encyclopedia, 2020, p.35). It can be seen that the economic development of Guangxi is at the middle and lower level in China, and the education level of Guangxi is also comparable to the economic level. From the national rankings of colleges and universities and the results of the college entrance examination, the national rankings and quantitative analysis of primary and secondary schools,

according to the statistics of the Guangxi Education Department in 2021, The national mean proportion of primary and secondary school teachers with a master's degree is 1.14%, and Guangxi's is 0.41%. The national mean proportion of teachers with a bachelor's degree is 57.97%, and Guangxi's is 44.15% (Statistics from the Department of Education, 2020). According to the data of the 7th census, there are 10,806 people with university degrees per 100,000 people in Guangxi, accounting for 10.81% of university education, which is lower than the national mean (15.47%). In the development of information technology 2.0 project, there are 3 teaching Environment, multimedia environment, mixed environment, smart environment, and Guangxi chooses multimedia and mixed environment almost 100%, while developed provinces account for more than 10% of smart education environment. The Information Center of the Guangxi Department of Education has invested a lot of manpower and material resources in the integration and innovation of information technology, various information competitions, and various information training in recent years, but the final implementation of information education is the leading principal, who is the school decision-maker The principal of the school is particularly important. However, education information can improve the level of education and teaching, improve the quality of students in each school, and improve the teaching staff, all of which must be seen as the leadership of managers. The development of school information depends on the principal, who is responsible for uploading, communicating and coordinating all aspects. It is particularly important to ensure the smooth development of the school's daily work. To sum up, as a relatively backward region in education, Guangxi needs teaching information to solve the current problems of teaching reform in Guangxi, face practical difficulties, and improve the quality of classroom teaching. Information leadership is required in the field of work, and Guangxi is currently lacking in this aspect. In order to narrow the education gap with the developed eastern provinces, the principal's information leadership has played a very important role in the sustainable development of the school.

It has been more than 10 years since the researchers put forward the meaning of the topic and the education information policy, but it is still difficult to implement it. The information construction is not yet standardized and perfect. Most

of the existing research stays in theory, and there are not many practical studies. Most of the studies at home and abroad focus on macro research, with more theoretical research and less empirical research. There are still more researches on the concept, definition, connotation, constituent elements and promotion strategies of principals' information leadership. There are more than 10 papers discussing local principals in regions. The status quo of information-based leadership, but the research and education is relatively backward in Guangxi, but there is no article, so more localized empirical research is needed as a guide to provide easy-to-operate and easy-to-use information for the promotion of information-based leadership for middle school principals in Guangxi. Implemented, easily controllable strategies and decision-making basis. Improving the leadership of information is conducive to solving the low-efficiency dilemma of education in Guangxi. Principals need to have a deep understanding of the status of school teacher education and teaching information, the level of student information, school information management, and school infrastructure. The state of leadership. Clarify the influencing factors and relationships of principals' information leadership, and propose strategies for improvement. Develop training courses and propose specific training methods according to the improvement strategy, and carry out practice conditions, so that the theory can be tested in practice. At the same time, for remote rural schools in Guangxi, how to implement and improve the principal's information leadership, so as to improve the school's information construction, promote the information capabilities of students and teachers, and ultimately improve the quality of education. At the same time, each school has formed its own education information management system, which has a definite impact on educational reform and has improved the school's organizational structure, cultural atmosphere, management model, etc., thereby improving the quality of basic education in Guangxi and reducing the gap between Guangxi and Guangxi. Disparities in national education.

Based on the analysis of the above research background, it can be shown that the international community attaches great importance to information-based education, and the country guides the leaders of information-based education to guide principals' information-based leadership, education modernization, digital

transformation and education equity. Therefore, this study conforms to the development trend of the world, meets the needs of the country and society, fills up the gap in the research of principals' information leadership in Guangxi, and promotes the theoretical significance and practical value of the promotion strategy of principals' information leadership. At the same time, it deeply analyzes the factors that affect the principal's information leadership, clarifies the relevance of the influencing factors, and proposes targeted improvement strategies.

Research Questions

1. What is the current situation of information leadership for principal of high school in Guangxi

2. How to develop strategies for information leadership for principal of high school in Guangxi

3. How to evaluate the suitability and feasibility of strategies for developing information leadership for principal of high school in Guangxi

Objectives

1.To study the current situation of information leadership for principal of high school in Guangxi

2. To develop strategies for developing information leadership for principal of high school in Guangxi

3. To evaluate the suitability and feasibility of strategies for developing information leadership for principal of high school in Guangxi

Scope of the Research

Population and the Sample Group

Population

The population included 271 principals from 271 high schools in Guangxi.

The Sample Group

The sample group included 159 principals from 271 highs schools in Guangxi.

The high school principals were selected by strategies random sampling and random sampling respectively in urban areas, 2n and rural.

Focus group discussion

The focus group experts for this study included 14 high school principals in Guangxi who met the following standards: 1) At least 5 years of experience in high school management, 2) Have experience in information management, and 3) Have a bachelor's degree or above Evaluation team of developing strategies suitability and feasibility

The experts evaluating the suitability and feasibility of the guidelines are 11 from high schools and some universities in Guangxi. The expert qualifications are as follows: 1) At least 5 years of management work experience, 2) Engaged in information technology work, 3) Master's degree or above.

The Variable

Information leadership is the variable of this study. It is a comprehensive capability leader, including 1) vision, 2) leader characteristics, 3) environmental factors, 4) teamwork ability, and 5) data-driven decision support.

Advantages

1. Currently employed at the Guangxi Information Technology Research Center, it is crucial to gain a comprehensive understanding of the status quo of information technology in Guangxi's basic education, particularly the information leadership capabilities among high school principals, in order to enhance the overall quality of education in the region. This insight will serve as a solid foundation for improving the educational landscape in Guangxi.

2. Foster the development of information leadership among high school principals in Guangxi, it is imperative to leverage available resources judiciously, incorporating findings from various training programs and research initiatives. The annual evaluations of education integration demonstration zones in Guangxi offer a timely opportunity to formulate tailored enhancement strategies, ensuring their alignment with ongoing efforts and the dynamic needs of the educational sector.

3. Guarantee the appropriateness and feasibility of these development strategies for enhancing the information leadership of Guangxi's high school principals, it is essential to engage both academic experts from universities specializing in information technology and seasoned principals with extensive experience in this field for evaluation purposes. By harnessing their theoretical expertise and practical insights, we can ensure the scientific rigor and practical relevance of our strategies, laying a solid foundation for their successful implementation and ongoing optimization.

Definition of Terms

Information Leadership refers to the level at which leaders use information technology to attract and influence leaders and stakeholders, and to continuously achieve group or organizational goals. According to its elements, it mainly includes the formulation of school information development vision and strategic planning, the improvement of personal information literacy, the ability to create an information environment, the organization of an information team with the ability to cooperate, collaborate and communicate, and can effectively use data information to drive school related activities. Decision-making, the ability to successfully facilitate the effective use of information technology in all areas.

Vision refers to in the context of information, the organizer is able to lead the development of the school's vision plan for information in the long, medium and short term, lead the development of the school's information management system, infrastructure construction, and planning for the use of funds, be able to explain the school's vision plan for information to the constituent members on different occasions, and also be able to evaluate the vision plan for information and adjust it timely during the process of information, be able to depict the school's The vision of the school can be depicted as a desirable vision, goal and direction, the specific division of labor of the management team on the goal of information, understanding of the current situation of the school's information development, and stage-by-stage evaluation of the planning, and the vision of the security and confidentiality of the school's network.

Leader Characteristics refers to the characteristics and qualities in carrying out work activities related to educational information mainly responsible traits, openness traits, agreeableness traits, extroversion traits, cognitive ability and problem solving ability. Specific table leaders can make suggestions for the development of teachers and let them play their specialties, can patiently listen to teachers to raise questions and answer their questions, is not an easy to worry about people, open-minded, has a strong sense of innovation, love their work, has a strong sense of enterprise and enterprise, like to explore 、 to discover the unknown things, continuous learning to enrich and enhance their ability, feel that they are better than most people, will use the threat of the world, and will be more than most of the people are good. The majority of people are excellent, will use threats or flattery and other means to persuade others to do things according to your wishes, in the face of great pressure, sometimes you will feel as if you are going to collapse as if you often feel energetic, full of energy, will be a little self-centered, not too much consideration for the feelings of others, things do not go well when you will feel discouraged, want to give up.

Environmental Factors refers to the fact that all kinds of leadership styles are influenced by the environment, which includes both external and internal factors. Internal environment in this thesis mainly refers to organizational culture, organizational structure, etc. The external environment mainly includes social culture, social conditions, market competition and laws and regulations will have an impact on the leader. Specifically, the leader's unit carries out the construction of information technology teaching resources, teachers implement information technology classroom teaching incentives, in terms of personnel, financial, asset management and other information technology management tools adopted, in terms of information technology equipment and network speed to meet the teachers and students in teaching and learning, in terms of the teachers can proficiently use information technology to promote teaching and scientific research, in terms of the degree of purification, beautification, and civilization of the campus environment, the teachers to participate in the training of information technology, the degree of initiative to learn new technologies, the proficiency of teachers and students in using

information technology communication tools, the learning environment of information technology, the promotion of students' use of technology to support learning, publicity, teaching and learning management, the sharing of teaching resources, the reward system for teachers' information technology teaching, and the participation in information technology-related training, etc.

Teamwork Ability refers to a group of people work together, mutual support and trust, good collaboration to manage conflicts, division of labor, joint problem solving and other communication skills, specifically refers to the leadership will encourage teachers to speak out different ideas from others, the use of the campus network will be made in response to the feedback of different opinions to do a special summary and reflection, and teachers on the work of the issue of communication and discussion, coordination of work and conflict between the school departments/staff. Carrying out the concept of people-oriented management, cooperation and communication with parents, community and other subjects outside the school, building a platform for teachers to participate as equals and help each other to learn, often communicating with students to meet the needs of students in their learning, clear expression of the need to communicate and exchange of information, a positive effect on teamwork and communication, and the management team will discuss and deal with controversial issues, and enable teachers to voluntarily share their experiences with each other. experience.

Data-Driven Decision Support refers to the use of facts, indicators and data analysis results to make school decision-making matters, and in the process of implementing the decision-making process to continue to use the results of data analysis to indicate the direction of the next step. Specifically, it means that leaders make decisions based on the analysis of data collected by the school, rely on data analysis in the decision-making process, analyze the data statistics of the school's information teaching, use the data as the basis for the school's digital resource construction program, and analyze and evaluate the data on the use of the school's financial resources. When evaluating the development of a school, relevant data will be used as a reference, data decision-making will achieve the expected results, schools are encouraged to build a system or method of data culture, data-driven

decision-making is more scientific than subjective decision-making, data tools are used to evaluate the performance of teachers, data tools are used to evaluate the development of students, data-driven decision-making enhances the efficiency of the school's work, and there is a higher awareness of data security.

Principal refers to the person in charge of school administration appointed by the national education administrative department. In charge of school affairs, representing the school externally, in charge of school affairs internally, concurrently serving as the legal representative and administrative person in charge of the school, presiding over the work of the school, being fully responsible for the school's education and teaching management to the government education department, and being fully responsible for the school's education, teaching, Work leaders in administration and management.

High School refers to the advanced stage of middle school. High school generally refers to the senior middle school of 9-year compulsory education in China. It is the last stage of middle school and belongs to the category of secondary education.

Developing Strategy refers to the collection of plans to achieve the goal, and the action guidelines and methods formulated according to the development of the situation.

Research Framework

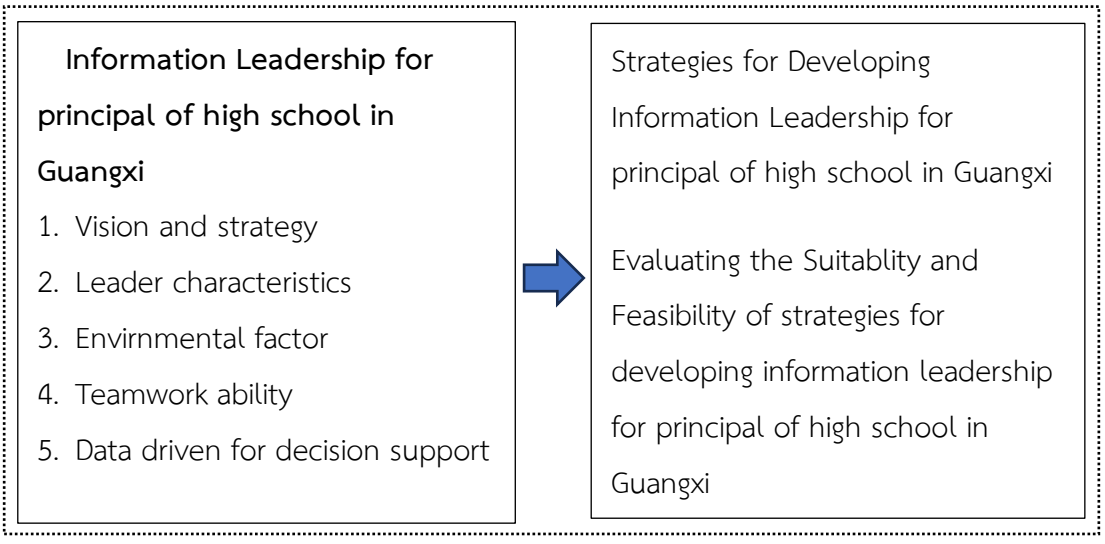

Figure 1.1 Research Framework

Chapter 2

Literature Review

This study uses educational management science and combines relevant theoretical research at home and abroad to analyze the concepts and theories of strategy, leadership, leadership, information-based leadership, and principal's information-based leadership. The principal's information-based leadership includes key elements, principal information Research on the status quo of leadership development strategies. Through the method of bibliometrics, systematically describe the research characteristics of middle school principals, middle school administrators, teachers, and students, and analyze the deficiencies of current theoretical research. It mainly includes the following aspects:

1. Concept of education administration
2. Concept of Leadership
3. Concept of information leadership
4. Context of high School in Guangxi
5. Related Research

The details are as follows.

Concept of Education Administration

Definition of Educational Administration

Management is a large professional category, which includes engineering management, administrative management, business management, public utilities management, etc. Educational management is a kind of public affairs management in management. Educational management is an organizational activity in which educational managers use certain theories and methods to rationally allocate educational resources, guide and organize educational personnel to complete educational tasks and achieve educational goals under specific conditions (Sun Miantao, 2007, p.45). Here we say that educational management is an organizational activity, and it also emphasizes that educational management is a form of activity. It

involves an organizational activity system including educational management systems and educational management concepts.

Murphy & Hallinger (1988, p.36) They define educational management as meaningful interventions and hands-on leadership processes to enhance student learning.

Leithwood & Lear (2003, p.58) They define educational management as the process of how research and practice influence school and student learning, and provide guidance and support within schools and the education system.

Hallinger & Heck (2011 , p.105) They define educational management as the process by which managers influence school and student learning by inspiring collaboration, building a shared vision, and promoting school improvement.

Sergiovani (2013, p.86) He defines educational management as "the process of establishing school goals and organization to achieve those goals". Relevant references include.

Xue Lixin. (2018, p.77) believes that educational management is a science that studies the process and laws of educational management. According to the characteristics of educational management objects, there are broad sense and narrow sense. Educational management in a broad sense: it takes the management of the entire national education system as its research object; educational management in a narrow sense: it takes a certain type of school organization as its research object.

Cao Peng. (2022, p.92). Educational management refers to consciously planning, coordinating and utilizing various resources inside and outside the education system in order to achieve the purpose of cultivating educational talents, combined with the law of educational development, so as to keep the educational work stable, healthy and orderly the process of development. Its purpose is to manage the development of secondary vocational education within a region by the government education administrative department through the use of various means and measures such as systems, personnel, funds, resources, and information, so as to ensure the high-quality and efficient completion of personnel training tasks.

Educational management in general includes educational goals and organization, which involves setting the goals of a school or educational institution, organizing resources and developing strategies to achieve these goals. Educational leadership emphasizes the role and influence of leaders in a school or educational institution to facilitate school improvement and student learning. Education policy and implementation are closely related to education policy and involve the process of formulating, implementing and evaluating education policy. Educational quality assurance focuses on ensuring and improving the quality of education, including setting quality standards, evaluating and supervising teaching, etc. Taken together, these aspects can be summarized as educational management involving the processes and practices of goal setting, resource management, decision making, educational leadership, policy development, and quality assurance for educational organizations.

Educational Administration involves the strategic management and leadership within educational institutions, aiming to enhance teaching quality and overall educational outcomes. It encompasses leveraging resources, conducting research, and formulating development strategies, with a focus on fostering information leadership among educators for effective decision-making and improved educational practices.

Basic Features of Educational Management

The basic characteristics of educational management mainly include educational organization, educational goal orientation,

Hallinger, P& Heck, R. H. (2011, p.81). Educational organization is education management which involves the organization and management of schools or educational institutions. It includes aspects such as personnel management, resource allocation, curriculum planning and school culture building.

Fullan, M. (2011, p.125). Educational leadership is closely related to educational management and leadership. It involves developing and supporting influential leaders to drive the development and improvement of schools and educational institutions.

Hargreaves, A., & Fullan, M. (2012, p.185). Educational resource management is educational management that involves effective management of educational resources, including human resources, material resources, and financial resources. It ensures that resources are allocated and fully utilized to support educational goals.

Sergiovanni, T. J. (2013, p.201). Educational goal orientation is educational management aimed at achieving educational goals. It involves setting clear learning goals, assessing student outcomes, monitoring school performance and improving student learning outcomes.

Sahlberg, P. (2015, p.168). Educational quality assurance is the concern of educational management to provide high-quality education. It includes aspects such as setting and implementing quality standards, evaluating teaching quality and continuously improving the quality of education.

Hallinger, P. (2018, p.167). Educational policy formulation and implementation is education management that involves the formulation and implementation of educational policies, including government policies, internal school policies, and curriculum reform.

Generally speaking, the basic characteristics of educational management have different understandings from different perspectives, and different researchers have different perspectives and levels, and come to different essences and characteristics of educational management. These basic features together constitute the elements of educational management. They emphasize the importance of educational organization, goal orientation, leadership, policy development and implementation, quality assurance, and resource management.

Basic Features of Educational Management include the strategic allocation of resources, integration of research and practice, and the development of leadership capabilities, particularly in information technology, to enhance decision-making and overall educational effectiveness. It emphasizes continuous evaluation, adaptation, and innovation to meet the evolving needs of the educational landscape.

Theory of Educational Administration

1. The Theory of Leadership Traits

The leadership quality theory prevailed in the 1920s. The theory states that whether a person becomes a leader is determined by his personality traits and characteristics. According to this theory, people can be divided into leaders and followers. Research on leaders can reveal some unique qualities that leaders should have. It is these qualities that make these people different from others and become leaders. . In the field of educational research, many researchers and educational research institutions have conducted special research on the characteristics of educational leadership, and proposed the characteristics that educational leaders must possess, such as academic qualifications, professional experience, professional knowledge of educational management, educational regulations, and responsibilities. Hoy. (2006). The characteristics of effective school leadership have been classified and summarized, encompassing personality, motivation, and skills. Personality traits include self-confidence, stress tolerance, emotional maturity, and honesty. Motivation encompasses task-orientation, interpersonal needs, values, and expectations. Skills are categorized into technical skills, interpersonal skills, theoretical skills, and managerial skills. Hanfel et al. conducted an investigation and analysis of the leadership qualities of 32 primary school principals, discovering that those who maintain the most effective organizational relationships exhibit traits such as friendliness, responsibility, energy, enthusiasm, courage, compassion, autonomy, confidence, acceptance, optimism, cheerfulness, and others. In a practical study on school leadership, Bolam et al. found that the principal's leadership traits primarily manifest in integrity, honesty, fairness, responsibility, affinity, strategic thinking and planning capabilities, keen awareness of employee needs, and proficient interpersonal communication and coordination skills. McEwan surveyed the characteristics of high-performance principals through a questionnaire and found that top principals excel in communication, play the role of educators, formulate visions, act as facilitators and reformers, and actively contribute to school culture and development. In formulating professional standards for principals of primary and secondary schools in our country, Zhang Xiaofeng (2011, p.45) identified six essential qualities for a principal: leader of

education and teaching, leader of school development, manager of school organization, promoter of teachers' professional development, education researcher, leader of the school, and publicist of school development. These qualities are expounded from five aspects: concept, knowledge, ability, personal character, and behavior. The theory of leadership traits reveals common qualities that leaders should possess, which greatly aids in promoting the professional development of principals. However, by the mid-1950s, this theory had faced significant challenges and question. Some scholars argue that traits can easily lead to confusing conclusions because important leader characteristics that are barely separable in one study may not necessarily play a role in other situations. Stogdalization proposes that trait differences between leaders and non-leaders are not fixed across various situations. A person with leadership traits may become a leader in one situation but may not necessarily be a leader in another. Costa and McCrae selected 22 vocabularies for analysis, comparing the relationship between self-ratings, peer ratings, and psychological counselor ratings on these traits. Their analysis identified five factors that consistently appeared at the top of the list, which later became known as the Big 5 personality factors. One widely used framework in the context of leadership trait theory is the Big 5 personality trait model, which includes openness, conscientiousness, extraversion, agreeableness, and emotional stability. Research indicates that certain traits correlate with success in leadership roles.

Trait theory includes elements including attractiveness, environmental sensitivity, outsider perspective, insider knowledge, willingness to take risks and sacrifices, self-confidence, empowerment orientation, and vision (cognitive ability). Common inclusion elements can be extracted (John antonakis, DD, 2011, p.132). They all have elements in common and overlap a lot.

To sum up, leadership trait theory is a theoretical framework for studying the relationship between a leader's personal traits and his leadership effectiveness. This theory posits that leaders possess certain leadership-related personal traits that make them more likely to be successful in leadership roles. Leadership trait theory, through the study of the personal traits of leaders, aims to identify key traits associated with successful leadership and to provide guidance for leader

development and practice. However, it should be noted that leadership traits are not the only factors that determine leadership effectiveness, and other factors such as situation and behavior can also have an important impact on a leader's performance. Therefore, in practical application, leadership trait theory needs to be combined with other leadership theories and research to form a comprehensive and comprehensive model of leadership understanding and practice.

2. X Theory and Y Theory

In 1960, Douglas McGregor argued convincingly that most managerial behavior comes directly from managers' assumptions about their own subordinates. That is to say, the view of people held by the managers of the organization determines how the organization actually works and the structure of the organization. McGregor combines the very different assumptions into Theory X and Theory Y (Theory X and Theory Y).

Managers who adhere to the × theory view people as follows:

1. Most people don't like to work and try to avoid work as much as possible.

2. Because people don't like to work, they must be coerced, controlled, directed, and threatened.

3. Most people like to be directed and controlled by authority.

In contrast, managers who hold Theory Y believe that:

1. Work is like play, rest is a natural thing.

2. Efforts to achieve goals are a result of rewarding achievement. middle

3. Under normal circumstances, people take responsibility and seek responsibility.

McGregor believes that people need to find satisfaction in their work, and Theory X violates this need of people, and is incompatible with democratized and participatory organizations. Therefore, he supports Theory Y, arguing that its assumptions are closer to the behavior of people in contemporary organizations. The theory is less concerned with organizational structural issues and favors a philosophy of general management that calls for a re-examination of all levels of organizational structure. For example, it proposes that job enrichment should replace highly specialized jobs and departments, and that the span of management should not be

too narrow but wide enough to provide more freedom and opportunities for employees to develop and improve their needs. In addition, hierarchy is no longer important, and people should pay more atention to decentralization and authorization of decision-making, and formally rational powers should be transformed into powers delegated to subordinates.

The Theory of Educational Administration encompasses the principles and frameworks guiding the strategic management and leadership of educational institutions. It emphasizes the importance of leveraging resources, fostering collaboration between academia and practiti1rs, and developing effective strategies, such as enhancing information leadership, to improve educational outcomes and meet the evolving needs of the sector.

Individuals and Organizations

The responsibility of school leaders is to promote the realization of organizational effectiveness, which requires subordinates to work hard to achieve the same goal. In schools, subordinates refer to teachers and all other professionals who deal with students. Chris Argyris believes that those organizations stipulated from the perspective of bureaucracy are rigid and impersonal, which seriously hinders employees from fully realizing their potential. He described the formation and development of human nature, put forward a premise that organizational structures are often not suitable to meet people's needs, and asserted that by analyzing the basic characteristics and formal organizational models of relatively mature people, people will find that people The self-actualization itself is incongruous. This fundamental inconsistency naturally creates all kinds of conflict and frustration for organizational participants. Arygris proposed that human nature gradually develops from infant-like immaturity to adult maturity, which is a continuous process from immaturity to maturity. This point of view comes from psychology, rather than a purely physiological perspective. According to the continuous process proposed by Argyris, the process of individual maturity is the process of individual gradually requiring more activities, is to achieve relative independence, to carry out actions in many different ways, to form a long-term vision, to obtain a status superior to peers, to be more aware of self, Control the white-me process. He argues that teachers and

other professionals want to be seen as mature people, but modern bureaucracies treat people as immature. Thus, the upper class becomes hostile to members of the lower class. This set off a chain reaction of correspondingly tighter management by school leaders, which in turn had the opposite effect, preventing optimal organizational effectiveness.

Of course, the restrictive effect of the bureaucratic organizational structure can also be alleviated. The way is: the rules and operating procedures of the organization are no longer so rigid, the division of labor is gradually reduced, the activities involved in decision-making are gradually increased, and the organizational structure becomes more rigid. flexible. Argyris believes that with more use of participatory management structures, human nature will be formed and developed, thereby eliminating incongruity between individuals and organizations.

In summary, Theory X believes that employees need strict control and supervision, while Theory Y believes that employees have the ability to self-motivate and self-manage. These two theories represent different management concepts and leadership styles, and have important guiding significance for how organizations view employees and manage them. However, the real situation is often complex and diverse, and effective leadership and management often require the flexible use of different management strategies according to specific situations and employee characteristics.

3. Theory Z

William Ouchi studied high-productivity firms to discover whether they shared common characteristics. If so, what are the characteristics? In order to explain the successful phenomenon of the company, he proposed Z theory (William G, 1993, p.56). This is an extension of McGregor's x-theory and y-theory. The difference between them is that Theory X and Theory Y distinguish individual leadership styles, while Theory Z focuses on the cultural issues of the entire organization. In other words, Theory Z does not care about the attitudes or behavior patterns held by individual supervisors. Instead, it focuses on the role of organizational culture in the way the entire organization is constructed and managed. It includes permanent hiring, making consensus decisions, individual responsibility, slow evaluation and promotion,

informal control systems and explicit behavioral measurements, moderately specialized career aspects of satisfaction. When applied to schools, the theory is characterized by: trust, sensitive and intimate behavior, shared control and decision-making; training in planning, organizational processes, budgeting systems, and interpersonal skills; motivation driven by personal interests; long-term rewards; high The importance of quality education etc.

Trust, Sensitivity, and Intimacy, according to Ouchi, there is no agency without trust, sensitivity, and intimacy. In schools, trust exists only for those who know that their goal is ultimately harmonious coexistence, and one cannot trust others without knowing what they are doing, their language, their technology, their problems, etc. Trust is formed only after intimate professional contact with others. This contact can refer to the intimate interpersonal experience between students and students, teachers and students, teachers and teachers, leaders and teachers, leaders and students.

Shared control and decision making, school leaders must spend sufficient time discussing school goals and school operations with students, teachers, parents, and the community. They must understand the incentive system that may exist in the career of employees, help employees obtain these incentives, and encourage employees to fully trust them. In this way, leaders can invite subordinates to participate in management and involve stakeholders in making decisions that will affect the way they carry out their responsibilities.

Training is one of the post-employment promotion paths. The quality circle is advocated here, also known as study group and cooperative study group. It is composed of various small groups. Members meet regularly to discuss work methods and introduce ways to improve work quality. The purpose of quality circle formation is to produce a group-based suggestion system for solving problems and improving school quality. It requires a certain period of training to increase the participation of members so that they agree in decision-making and jointly manage the organization. The purpose of this training is to understand the organization's goals, problems, and overall resources. Specifically, teachers and other nonadministrative staff embrace planning, organizational processes (including motivation, leadership, decision making,

communication and change, etc.), systemic budgeting processes, group dynamics, and the day-to-day work of school leadership that many ordinary teachers do not understand. The aim is to create a culture of openness, trust, and employee engagement.

The motivation driven by personal interests, the world is prosperous, all are profit. All the hustle and bustle in the world is for profit. This sentence expresses the essence of human society. Both individuals and organizations act in pursuit of their own interests. Therefore, analyzing problems from the perspective of interests can grasp the laws of the world. According to Ouchi, there is only 1 form of interest in humans, and that is personal interest. If we fail to create an environment that allows people to naturally do what is good for them and to satisfy their own self-interest, then we will continue to fight, suppress, prevent, and may never even fully commit to work and achieve high results. productivity. In an organization that implements Theory Z, because people participate in setting the goals of the system, we can say to them: "Do what comes naturally to you; do what you love because we think you choose to do it." These things benefit the entire organization at the same time.

The memory ability of the organization is crucial. The core leader of the organization must remember who has taken on more work, who is loyal to the organization, and who has sacrificed their spare time. He must ensure that the efforts of these people are recognized and rewarded by everyone. In Ouchi's view, if organizations have such a memory ability, people will firmly believe that as long as they do the right thing, they will be rewarded accordingly. In this way, their selfishness, narrow-mindedness, and short-sightedness will disappear. In response to most school districts still operating on a fixed salary system, Ouchi said that schools need to break down the current bureaucracy into evaluation, promotion and the importance of high-quality education. 1 of the wealthiest assets in any country is the entire Society is at its best, and the school system is a prerequisite for its economic health. High-quality education produces a high-caliber workforce and increases the economic capital of an advancing nation. Civic civilization is the key to a nation's prosperity.

To sum up the above, Theory Z is a theory or framework based on system theory and comprehensive thinking. Symbolizes integrity, synthesis or system, indicating that this theory looks at educational institutions and management issues from a global perspective. Emphasize that educational managers need to consider various factors comprehensively, including environmental factors inside and outside the school, educational policies, the needs and expectations of relevant stakeholders such as teachers, students, and parents, and the interaction between various levels within educational institutions. Systematic includes comprehensive theories of overall goals and strategic planning, comprehensive decision-making, educational quality and performance evaluation, educational innovation and change management, etc.

4 Theories of Transformational Leadership

Transformational leadership is a style of leadership that emphasizes a leader's ability to guide organizations and teams to positive change and innovation. This kind of leadership involves identifying and taking advantage of opportunities, motivating employees, moving the organization forward, and adapting to changing circumstances. Rewards are a means of motivation, a measure of people's sense of honor and enterprise, and a mobilization. The enthusiasm of administrative personnel and management counterparts, and the management method of maximizing potential capabilities. Transformational leaders shape an inspiring vision that engages and engages employees. They work by motivating employees, inspiring their enthusiasm, and convincing them that their work is meaningful to the organization and society as a whole. Transformational leaders are usually open and willing to listen to employees' ideas and suggestions. They communicate transparently with employees, share information, and encourage team members to share

5. Transformative Learning Theory

Transformative learning theory concept, the process of using previous interpretations to analyze a new or revised interpretation of the meaning of an experience as a guide for future action (Mezirow, 1997, p.89). Individuals reinterpret a previous experience or a new experience from the perspective of a new set of expectations to generate a new meaning or perspective on the existing experience. He believes that transformational learning is the process of continuously affecting

change within a frame of reference. Adults already have a series of communication, thoughts, values, emotions, etc. These life experiences constitute their reference standards for viewing things and limit their living world. As a person reflects on the assumptions or expectations underlying events in one's life and revises those assumptions as they are found to be wrong or inadequate, transformational learners move 2ard a more holistic, differentiated, self A reflective system of new meaning concepts with experience integration. A learning outcome is the journey through which a learner produces significant change that affects future experience. According to this definition, if the learning does not result in significant changes in the learner's personal development, the learning is not transformational learning (Clark, 1993, p.63). A person must constantly question their existing assumptions, beliefs and values in order to have real change; critical thinking is the core process of transformational learning, and this kind of transformational learning is a learning process of liberation. In this process, the individual breaks away from the limitations that he took for granted or beyond his control in the past, and tries to find alternative thinking or choices that he has never thought of before (Crantion, 1996, p.101). Looking at these descriptions, it can be seen that they all point out the substantive characteristics of transformational learning, that is, adults need to examine, question and revise their original world outlook, outlook on life or values in a certain way and way, so as to adapt to new situations and learn new experiences. This is the essence of transformational learning and the main path of adult learning.

The transformational learning described by Mezlow roughly includes the following basic processes: triggering events, reflection, rational conversation, and reintegration.

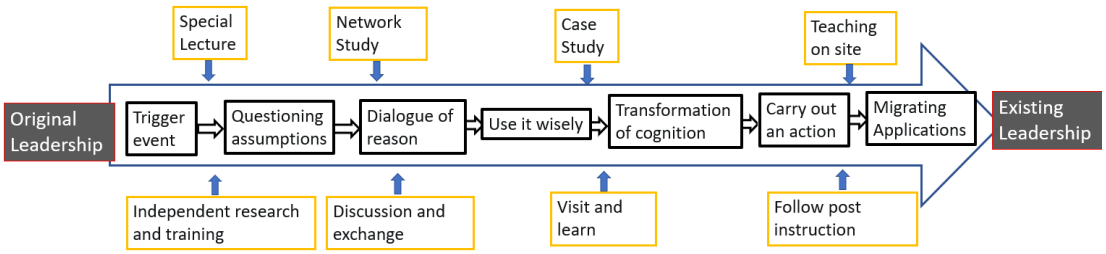

Figure 2.1 Transformational Learning Theory

There are many conditions and forms of learning for transformational learning, but by no means all learning is transformational learning. The generation of transformational learning is based on certain internal and external conditions. Only when these conditions are mature and effective, can provide the possibility for the occurrence of transformational learning.

1. Internal conditions—the differences in age, culture, experience, motivation, etc. among individuals with existing foundations will have varying degrees of impact on the occurrence of individual transformation. Different individuals facing the same event will have different value concepts and value judgments. Due to their different actual situations, they will build a set of cognition or concept system with their own characteristics, and make corresponding decisions and choices in their own way. From this perspective, whether transformational learning can take place depends largely on the internal conditions and qualities of individuals, and there are significant differences in transformational learning due to different individuals.

2. External conditions—the interaction or support of others

Due to the limitations of individual ideas, inherent ideas directly affect the current value judgments and behavior choices, so it is necessary to go out of the individual's thinking circle, seek support in the interaction with others and help from others, so as to promote their own principles. There is a new shift in concepts. This external condition includes not only a safe, open, and trusting environment that allows participation, cooperation, exploration, questioning, and critical reflection, but also dialogue and cooperation under a relationship of unity and equality. Strength has a crucial influence on the realization of individual transformational learning, and plays an indispensable and important role in the occurrence of individual transformational learning (Chen Wei & Li Jin, 2016, p.87).

Transformation theory has had a profound impact on the development of psychology, but it has also been criticized and challenged. Especially in terms of scientific verification, some viewpoints are difficult to be strictly verified, but Mezlow's theories are very clearly listed, especially suitable for training people, especially for the improvement of principals' information leadership. It has an important support and theoretical reference.

6. Improvement strategy

Strategy, refers to strategy; stratagem. Generally, it refers to a collection of programs that can achieve goals, and action guidelines and methods formulated according to the development of the situation. The improvement strategy refers to the process of formulating an action plan and its supporting resource allocation in order to improve the information leadership of senior high school principals in Guangxi to achieve their goals, and also a series of methods formulated and implemented in order to improve, enhance or optimize certain aspects , plan and act. These enhancement strategies are designed to increase the principal's productivity, quality, performance, or other goals so that the school, individual, or program can achieve higher levels of achievement or outcomes. The promotion strategy usually needs to consider the following aspects:

Goal Setting: Identify what you want to improve and define the criteria by which you will measure your success.

Analysis and Assessment: Analyze the current state to identify problems, bottlenecks or opportunities. Involved in data analysis, interview data collation, etc.

Develop an improvement training plan: Based on the assessment results, design a detailed improvement plan, including specific steps to be taken, resource allocation and timetable, etc.

Implement Actions: Execute the planned actions and take the necessary actions to achieve the intended goals.

Feedback and Improvement: Continuously monitor the performance of actions, collect data to assess their suitability, and make necessary adjustments. Based on the data and feedback collected, the promotion strategy is adjusted and improved to ensure the best results.

Continuous Improvement: Communicate with relevant stakeholders to ensure they understand the importance of the improvement strategy and gain their support and participation. Improving strategy is an ongoing process that requires constant search for new opportunities for improvement and constant adjustments in practice.

"Individuals and Organizations" refers to the dynamic interplay between individual actors and collective entities within any given context. It highlights the importance of understanding both individual behaviors and motivations, as well as organizational structures, cultures, and goals, in shaping outcomes and driving success.

Concept of Leadership

Leadership was originally translated from the English word "leader", so the meaning of "leadership" can be analyzed from the etymology. In the "Longman Dictionary of Contemporary English", the meaning of the word is the necessary quality or qualification of a leader (Longman GroupUK Limited, 1987, p.291). Since the beginning of the 20th century, there have been a large number of studies on the theme of "leader". During this phase, researchers and practitioners alike work to analyze and define leadership. Now, different researchers have different definitions of leadership, and there are more than 3,000 empirical studies in this area (Bernard M. Bass, 2007). Research results on school leadership show that there are 6 main types of leadership: instructional leadership, transformational leadership, moral leadership, participatory leadership, contingency leadership, and managerial leadership. The following introduces some scholars' understanding of "leadership": In "Organizational Leadership", leadership is defined as: the process of getting others to understand and agree what must be done and how to do it effectively, and the promotion of individual and collective efforts process to achieve a common goal (Gary Yukl, 2004, p.97). Daft. (2008, p.39). Point out that leadership is an influential relationship between leaders and followers, when they try to make a real change and expect results that reflect common goals (Richard L. Daft, 2005, p.56). "Leadership: Leadership and Practice" believes that leadership is a process in which individuals influence a group of individuals to achieve common goals (Peter G. Northouse, 2010, p.201). "Management" believes that leadership refers to the activities and processes in which leaders motivate and influence people to accomplish organizational goals in various ways in a specific environment (Liao Jianqiao, 2010, p.105). The meaning of leadership in Random House English Dictionary is the ability to lead (Flexner, S.B,

1987, p.187). All leadership activities involve two groups of people, the leader and the led. They realize the leadership process through interaction, communication, and influence. From this perspective, the realization of leadership is through the process of interaction between them, and the realization is task-based. The quality of leaders may be the prerequisite for realizing leadership, the guarantee for the realization of leadership process, and an important condition for exerting leadership behavior and leadership effects. Leadership is a complex social activity, and different leadership situations and jobs have different requirements for leaders' abilities. Therefore, it is easy to achieve leadership by systematically thinking about the leadership situation, the leader's quality, ability and style. Leadership is carried out in a certain situation, and the situational difference and uniqueness of leadership is 1 of the important factors that affect the choice of leadership behavior.

Leadership is composed of leadership information planning, decision-making, motivation, control and commanding power (Huang Junhan, 2005, p.89). Leadership is the sum of the quality, ability and influence of the leader (Li Chunlin, 2001). Leadership is an individual's influence to attract followers and make them willing to follow to achieve common goals. It includes leadership characteristics and behavioral skills that affect followers. Leadership is the ability of leaders to express their will to followers and demand obedience, respect, loyalty and cooperation (ciulla, 2002, p.104). That is, the concept of leadership is closely related to the quality of leadership, leadership process, leadership behavior, leadership ability, leadership knowledge, and leadership situation. Together, they constitute the concept of leadership and explain the relationship between the various elements of leadership (Chinese Academy of Sciences "Technology Leadership" research group, 2006, p.43). Leadership is the art of driving everyone to work hard for a common goal (James m.kouzes, BZ, 2011, p.54). Different scholars have different understandings of leadership. Leadership can be described as a set of behaviors that motivate people to follow the leader to get where they want to go, not simply obey. In the information environment, principal leadership has been endowed with a new connotation (Wang Lu, 2010, p.93).

Leadership is the individual who maximizes the desired character traits (Bass, BAR, 2008, p.59). Kaze, a representative of the theory of leadership skills, believes that leadership is the knowledge and ability required by leaders to accomplish management tasks and work goals, including technical skills, interpersonal skills and conceptual skills (Kaze, R, 1955, p.241). details as follows:

Individual differences affect the connotation and expression of leadership, a social phenomenon, showing certain individual differences. People prefer tall leaders, which can be explained from the perspective of evolutionary psychology. Tallness helps to solve adaptive problems and is beneficial to reproductive adaptation. For the same leadership dimension, different individuals perform differently in different situations. Jugde analyzed 222 correlations among 73 samples by means of meta-analysis, and found that the 4 traits of extraversion, responsibility, emotional stability and openness in the Big 5 traits are closely related to leadership (Jugde, T, 2004, p.112). Extraverted people are more confident, generally bold and aggressive, and more ambitious. People with extroverted personalities are more likely to become leaders, but extroverted people are more likely to conflict with others, which means that extroverted leaders may have conflicts with others. Followers have more contradictions and conflicts, and are more willing to make high-risk decisions, but may have difficulty sticking to a long-term plan; people with strong responsibility will consider more carefully when making decisions, and have a more sense of morality. A sense of responsibility is important for leaders Power has both positive and negative meanings, and can create a fair and just working environment, but leaders with a strong sense of responsibility are not good at coping with changes, are weak in suitablity, have a strong desire for control, and are more likely to lack vision; emotions Stable people are more willing to take leadership roles and have a more positive vision, but they are less likely to see risks and think less about dangerous situations; open people are more innovative and adaptable to the environment, but they tend to Does not conform to traditional norms and leads the team in an overly independent direction; agreeable people think more comprehensively, have more positive interpersonal activities with others, have fewer social conflicts, and rarely have extreme behaviors, but they often lack desire and lack Innovative, easily

influenced by others (John antonakis, DD, 2011,p.204). Some negative traits (narcissism, showmanship) also have positive meanings. Narcissistic people exaggerate their self-worth and like to take bold and aggressive actions. Dominant people have a strong desire to be aggressive and control, and are more likely to become leaders. Leaders who are in a controlling position show a Strong aggressiveness and desire to control (Jugde, TBJ, 2002, p.104).

Based on the above studies, we can know that the process of leadership formation will be affected by many factors, and different researchers have different definitions and connotations of leadership, but there are some commonalities in general:

Although different scholars have different definitions of leadership, leadership can be roughly classified into several aspects:

Competence theory, supporters of this theory understand leadership as the collection of various abilities that leaders use to develop. For example, some scholars point out that leadership emphasizes how leaders encourage others to improve their work enthusiasm and ability to make contributions.

Influence theory, supporters of this theory understand leadership as the leader's influence on his leaders and followers, that is to say, this ability is an ability to influence others, especially to influence others to complete certain challenging tasks. target impact. Influence is the essence of leadership. Everyone can possess and exert leadership. Once it has a clear influence on the behavior of others, it can be understood as taking leadership (Li Lin, Tong Xinhong, 2005, p.47).

According to the theory of power, leadership is understood as a comprehensive force based on the leader's work environment. Leaders form a certain force through the integration and utilization of various resources in their work environment, and make this force interact with other forces. It is a concrete manifestation of a certain resultant force formed by the relationship between them (Tong Zhongxian, 2002, p.57).

It can be seen that although the connotation and understanding of leadership are relatively rich and diverse, these viewpoints also have a certain commonality, that is, the formation and development of leadership will be

influenced by the leader's own quality, leadership behavior and process, and leadership knowledge structure system. It is the combined influence of multiple factors such as leadership environment and leadership environment, and it is precisely under the joint action of these factors that leadership is formed. For this reason, the concept of leadership in this paper is the influence of leaders on their leaders in specific situations, and leadership behavior and leadership effectiveness are the most basic manifestations of leaders.

The concept of leadership encompasses the ability to guide, inspire, and motivate individuals or groups 2ards achieving a shared vision or goal. It involves exercising influence, making strategic decisions, fostering collaboration, and empowering others to contribute effectively, ultimately driving organizational success and growth.

Concept of Information Leadership

Regarding information leadership, different scholars at home and abroad have different cognitions and interpretations of it. Foreign scholars generally use "technology leadership" to collectively refer to "technical leadership", "information technology leadership" and "information leadership". The evolution of the concept connotation. In domestic academic circles, early scholars once used "technology leadership", "information technology leadership" or "information and communication technology leadership" to represent "information leadership". With the gradual deepening of the impact of information technology on education, in recent years Chinese scholars prefer to use "information leadership" to describe "information leadership". Correspondingly, the domestic academic circles have successively used different conceptual expressions such as "educational technology leadership", "information technology leadership" and "information leadership". "The concept is inherited in one continuous line, and its connotation is rich and easy to understand. In recent years, it has gradually been generally accepted by scholars. Regarding the relationship between information leadership and leadership, this study believes that information leadership is a derivative concept and sub-concept of leadership, but information leadership cannot simply be equated with leadership. Because in

essence, information leadership is the two-dimensional fusion product of leaders' information literacy and leadership ability; from the perspective of development, information leadership is the integration of traditional leadership with information content and attributes And the new type of leadership generated; From the perspective of structural connotation, information leadership refers to the leader's information literacy, information vision planning, information resource construction and management, and information evaluation and promotion under the background of information technology. Ability. Chinese and foreign scholars have different cognitions and interpretations of information leadership, which shows that people's research on information leadership is in the process of deepening. However, from the affiliation relationship between information leadership and leadership, it can be seen that because information leadership is a sub-concept, subordinate concept or derivative concept of leadership, the two have a certain degree of inheritance and continuity. According to some connotations and attributes of leadership will be transmitted and inherited to the connotation of information leadership, to a certain extent, some research theories and research results on leadership have a certain degree of guiding significance for the research on information leadership. When carrying out research on information leadership, we can get inspiration and reference from related research on leadership. However, because information leadership is a new type of leadership after adding information elements and connotations to leadership, it is the extension and deepening of the concept of leadership, and it is a new manifestation of principal leadership under the background of education information. Although information leadership and leadership are closely related, there are also great differences between the two. Therefore, specific issues need to be analyzed in the process of learning from leadership-related research results.

Foreign scholars have long tried to define "information leadership". American scholar Dodge believes that information leadership is "under the intervention of information technology, individuals, groups, or organizations develop their own attitudes, emotions, concepts, behaviors, and efficiencies." process of social interaction in which aspects change" (Avolio, BKSDG, 2001, p.79). According to the American consulting expert Annanzio's point of view, "Information leadership is a

brand-new and professional organizational management method, which helps organizational managers to change the organization and participate in the competition in the information world" (L, ASAJ, 2001). Burke, a famous American researcher, also believes that information leadership is an integration of technology and management, which can improve people's cognition and management ability of information technology (Burke, R, 2001, p.85). Based on the definition of leadership, Huo Guoqing and others believe that information-based leadership is leadership in the context of information (Huoguoqing, MAL, 2008). Huang Ronghuai and Hu Yongbin started from the relationship between information leadership and school information construction, and decomposed information leadership into 3 components: the leader in the information age, the led, stakeholders and the leadership situation (Huangronghuai, HY.2012, p.90). "National Educational Technology Standards" starts from the perspective of management, from 6 aspects of leadership and vision, teaching and learning, work efficiency and professional practice, support management and operation, evaluation and evaluation, and social, legal and moral issues. Information leadership is clearly defined (American Association for Educational Technology, 2008). The National College for School Leadership (NCSL) in the United Kingdom pointed out that information leadership mainly includes 3 aspects: vision, application and evaluation; among them, "vision" includes that leaders should have the skills needed for planning and knowledge, and let all members understand the importance of planning; "application" includes how to innovate in educational information, how to integrate information technology into the process of teaching and learning, and how to continuously and effectively apply information technology to improve the lives of students and teachers Quality, etc. "assessment" includes review of resources, evaluation of construction and supervision of application, etc. (Wu Quanhui, 2008, p.74).

The Concept of Information Leadership refers to the ability to effectively utilize and manage information and technology to guide and inspire individuals or organizations 2ards achieving their goals. It involves leveraging data-driven insights, fostering a culture of innovation, and making informed strategic decisions to drive progress and transformation in the digital age.

Concept of Information Leadership for Principal

The principal's information leadership is defined as a compound leadership ability that combines the principal's technical ability and leadership ability (Zhao Leilei, 2017, p.65). The principal's information leadership is defined as the principal's ability to realize the school's information development vision through continuous planning and revision of the vision on the basis of clarifying the importance of education information (Lu Yan, 2018). The principal's information leadership is defined as a compound ability that the principal can use emerging information technologies such as big data and AI to improve his own cognition, integration, innovation and other abilities, so as to complete the process of school information construction (Wang Wei, 2019, p.67) . The principal's information leadership is defined as the process by which the principal uses his own information literacy and ability to realize the school's information construction through planning, organization, coordination, and control (Dong Yan, 2015, p.87). The principal's information leadership is defined as the process in which the principal aims to improve the teaching level of teachers and the academic performance of students, plans the school's development vision, and mobilizes all resources to improve and realize the vision (Wang Yaqiong, 2016, p.77). The principal's information leadership refers to a kind of organizational leadership, which aims to highlight the process of information interaction between the principal and school members (Liu Xiaojie, 2018, p.73). School information construction is a systematic and intricate project influenced by numerous factors, with the principal's information leadership being a pivotal one (Tang Wenhua, 2013, p.60). Information leadership entails principals and related administrative staff expanding the application of information technology in teaching and transforming the teaching mode through learning, utilizing, and promoting it (Zhang Yihua, 2012, p.47). This research delves into the comprehension, insight, and execution of information-related management, decision-making, evaluation, and service performance. With these capabilities, it can further expedite the advancement of school information construction and application levels (Xiao Yumin, 2007, p.56). As the leader overseeing school development, the principal's awareness and acceptance of information directly impact the overall school's information level and

development. Essentially, it refers to the comprehensive leadership skills possessed by school principals in the information age. The principal's information leadership is perceived as their ability to achieve information development goals by formulating the school's information development objectives and strategies, guiding stakeholders and leaders, and managing the relationships between them, all under the principal's directive action (Sun Zhenxiang & Tang Wenhua, 2013, p.49). This definition interprets the principal's information leadership as the integration of a specific ability and the principal's realization process, rather than simply understanding it as the ability to build and promote information. Lu Jianhong (2021, p.126) proposed on the basis of a review of research at home and abroad that primary and secondary school principals' information leadership should include "basic information literacy and operational skills, information communication and coordination capabilities, information resource management capabilities, information environment creation capabilities, Information planning decision-making and application improvement capabilities and information personnel team building capabilities" and other 6 sub-dimensions" (Lu Jianhong, 2021, p.75).

Most views believe that information leadership is the ability of leaders to process, manage and communicate information in the context of an information society, the ability of leaders to implement management behaviors with the help of information, and the ability of leaders to innovate in event handling , is the ability of leaders to deal with problems more efficiently and accelerate the development of the organization with the help of information technology, and it is the integration with the process of realizing the above-mentioned capabilities (Xie Zhongxin, Zhang Jiping, 2009,p.46). Information leadership is the behavior of the principal to make decisions and take measures to promote school development based on his own information literacy. It is a comprehensive manifestation of the principal's personal information awareness and information skills. Under the support of this ability, scientific and reasonable The development goal of school education information refers to the ability and process of realizing the school's development goals through the rational use and distribution of various resources in the whole school. Specifically, the principal's information planning capability emphasizes the principal's ability to

formulate and design school information development goals; the principal's information management capability emphasizes the principal's ability to comprehensively manage the school based on information technology; the principal's information evaluation capability emphasizes What is important is the principal's assessment of all aspects of information teaching, information management, and information environment in the process of information construction. The principal's information communication ability means using online platforms, network tools, social software and other information tools to communicate with other management personnel, The ability to communicate with teachers, external school partners, superior leaders and parents of students. The improvement of classroom teaching effect and the improvement of students' grades are not the main manifestations of the principal's information leadership. This ability is manifested through a series of processes of goal planning, implementation management and final evaluation.

It is not difficult to find out by combing the research literature on the influencing factors of principal's information leadership that the current academic research on the influencing factors of principal's information leadership is not yet systematic and perfect. It can be seen that the academic research on the influencing factors of principal's information leadership needs to be further deepened. Clarifying the influencing factors is the logical starting point for proposing targeted improvement strategies. In other words, only when we have a clear and accurate understanding and grasp of the relevant factors that affect the principal's information leadership, can we propose feasible improvement strategies based on the influencing factors. Through the analysis and examination of the above factors, it is not difficult to conclude that these influencing factors are mainly objective factors. From the perspective of the principal’s personal leadership, the principal’s controllability of these influencing factors is not strong. In other words, these objective influencing factors are difficult to change with the principal's personal wishes in a short period of time. It is difficult to change the influencing factors, and it is difficult to effectively improve the corresponding principal's information leadership. Therefore, if we study the influencing factors of information leadership from the perspective of the principal, it is easy to find the influencing factors.

For example, Liu Meifeng (2009, p.167) believes that "on the basis of understanding the importance, urgency and necessity of information technology in school management, the principal can manage all aspects of the school through specific strategies, plans and programs, and can make the teachers and students of the school I agree with the implementation of the decision-making plan, and the process of finally completing the school's information construction is the embodiment of the principal's information leadership"; Wang Lu (2010, p.56) believes that "the principal's information leadership refers to the principal's use of modern information technology, means and resources, Multi-dimensional processing and processing of information to support its decision-making, promote the modernization of the school and surpass the ability of innovation"; Dong Yan et al. (2015, p.51) believed that "the principal's information leadership includes the school principal's influence and guidance in his field The ability of teachers within the scope to effectively carry out information-based teaching and continue to achieve the goals of school teaching development in the information age.

Liu Xiangyong (2007, p.26) pointed out that the problems involved in the principal's information leadership mainly include: whether the principal is easy to satisfy in promoting the use of technology, whether the principal can find out the reasons for the success and failure of the school's technology projects, whether the principal can formulate the school's technical planning, Can it solve the psychological barriers of teachers who are unwilling to use technology in teaching, etc.

Huang Ronghuai (2012, p.29) pointed out "school leadership in the information society" and "executive ability to carry out information construction", among which school leadership in the information society is mainly "under the background of information technology, the leadership team that affects school construction should have Advanced values, and the ability to lead the school 2ards the vision of information construction"

Pang Jingwen (2016, p.47) The principal should have an information vision, be able to actively and dialectically think about many problems that may exist in the introduction of information technology into the teaching process, and seek solutions; choose concepts and methods that are in line with the actual development of the

school; improve the information construction Guarantee mechanism; planning the development vision of education information facing the future, and in the process of realizing the vision, facing practice, constantly modifying, developing and perfecting the ability of this vision.

The academic circles can sum up information leadership into the following research perspectives, Understanding Information Leadership from the Perspective of Application Value. With the advent of the information society, information technology is gradually changing from a pan-technological form to an intelligent technology form. Today's society is in a new space full of new technologies and wisdom. It is found that almost all leaders, without exception, have to face the information-based leadership environment and the led who grow up in the information-based environment. As a leader, if you cannot make timely adjustments to your own leadership model, leadership methods and leadership methods under the background of information, your leadership effectiveness and leadership effectiveness will be greatly reduced, and even those who have grown up in the information age "Digital natives" will fall into the embarrassing situation of being incomprehensible, incomprehensible, and out of touch with the information age. This aspect is particularly pronounced in the field of education. Through literature review, we found that because some primary and secondary school principals do not have a systematic and comprehensive understanding of information leadership, some even think that information leadership is simply a basic management work that relies on computers and networks. This level of cognition leads to the extreme and one-sided construction of school information, so that in the process of leading information construction, only the construction of information hardware is paid atention to, but the characteristics of education information are not based on the characteristics of education information. Systematic analysis of the promotion effect of long-term development lacks the in-depth optimization of the working environment, learning form and management mode relying on information technology, resulting in the lack and insufficiency of the level of information leadership. In addition, through on-the-spot investigations, it was found that during the development of my country's education information, many primary and secondary school principals have not been able to

have a comprehensive and systematic understanding of information leadership. The current situation and other factors have caused some principals to still adopt traditional leadership methods in daily management, unable to think deeply and judge the development situation of educational information construction. New opportunities and new challenges. Some principals have concerns in the process of school reform, and even fear the reform, resulting in a decline in their ability to influence, which makes the school's information construction and various reforms in a passive situation, and many practical plans have not been effectively implemented. At present, improving the information leadership of principal groups has become a fundamental requirement of the country. In 2016, the "Notice of the Ministry of Education on Printing and Distributing the 13th 5-Year Plan for Education Information" clearly pointed out that the in-depth promotion of education information is of key significance for the comprehensive improvement of education governance capabilities, and it is necessary to promote education information and education and teaching innovation On the basis of improving the efficiency of education management, it realizes scientific decision-making support, refined management process, and real-time teaching analysis. In the context of the specific implementation of the "Notice", how to rationally develop principals' information leadership has become an important topic in the domestic education field.

In summary, we briefly discuss information leadership from several aspects. Understanding Information Leadership from the Perspective of Leader Capabilities, Scholar Burk (Burk, 2001, p.57) pointed out that information leadership is to promote the ability of leaders to quickly master and effectively use information technology by integrating the leader's conventional management ability and technical literacy. Chinese scholars Huo Guoqing, Meng Jianping and Liu Sifeng (2008, p.49) defined information leadership as the comprehensive ability of leaders to achieve the goal of organizational information construction by effectively influencing subordinates and stakeholders under the conditions of information technology. Huang Ronghuai and Hu Yongbin (2012, p.96) proposed after joint research that school information leadership should mainly include two basic dimensions of "information society school leadership" and "information construction execution ability", among which

"information society school leadership" dimension It refers to the values that should be possessed by the leadership group that plays an important role in the construction and development of the school under the social background of the continuous development of information. ability. Dutch scholar Huvila (2014, p.33) defines information leadership as the ability of leaders to lead members of the organization to carry out information construction activities, and to accurately make decisions about applications, management of information resources and equipment. Sun Zhenxiang, Ren Lingling, Guo Xuling and others (2014, p.19) proposed that information leadership is under the condition of information technology, the leader relies on information technology to deeply influence the members of the organization, and leads the members of the organization to jointly realize the goal of school education information construction. Bi Xinhua and Wang Lei et al. (2014, p.75) believe that information leadership is the ability of business leaders to integrate and use modern information technology to lead enterprises to cope with information challenges.

Understanding Information Leadership from the Perspective of Leadership Process, Scholars Avolio (2000, p.118) and others believe that information leadership is a process in which individual members or organizations change in terms of ideas, values, attitudes, emotions, behaviors, or performance under the influence and promotion of information technology. Scholar Watson (2006) believes that the chief executive officer (CIO) of the information system promotes the implementation of the information vision plan by establishing the direction of organizational information development and creating commitments, mobilizing in terms of policies, systems, and psychology, and coordinating resource allocation. , and respond to changes in the environment by adjusting the information system modules, so as to achieve the common goal of the organization's information development. Yin Jianhua (2010, p.35) interpreted information leadership as the process in which leaders rely on organizational, planning, execution, communication, decision-making and evaluation capabilities in the information environment to lead subordinates to carry out educational information construction. Northhouse (2010, p.61) defines information leadership as a complex social process in which leaders influence subordinates through information means to achieve the goals of the entire organization. Wu Weiwei

(2011) defined information leadership as the comprehensive decision-making ability and leadership quality shown by the leadership team in the process of implementing information management, planning the development blueprint, and guiding and managing subordinates to achieve the goals together.

Understanding Information Leadership from the Perspective of Affiliation. Clarifying the connotation and extension of the relationship between "leadership" and "information leadership" is the logical starting point for further research on "information leadership" and "principal information leadership". In this regard, since the 1990s, many scholars at home and abroad have carried out active research on the impact of information technology on leadership and the application of classic leadership theories in the information environment, and have achieved a series of research results. For example, scholar Shamir (1997, p.68) pointed out that information technology provides leaders with unprecedented information acquisition capabilities. On the one hand, it changes the leadership structure of leaders, and on the other hand, it also changes the nature of leadership; Leadership interactions are explored. He believes that information provides new environmental conditions for leadership. On the one hand, the interaction between information and leadership has changed the leadership structure (Avolio, 2000, p.81), and on the other hand, it has also promoted the application of information technology in management. Point out that information leadership is the product of two-way interaction between information and leadership. Pulley (2002, p.58), a researcher at the "Creative Leadership Center" of Xerox Corporation, believes that with the transformation of human society into an information society and the transformation of human organization and management models, traditional leadership concepts will inevitably be replaced by new ones. In the 20s and 30s of the 21st century, people don't need to add E before information leadership, because leadership at that time is information leadership." Scholar Zhao Leilei (2017, p.46) In the article "Principal's Information Leadership: Concept, Formation and Cultivation", it is pointed out: "Information leadership is the product of the two-dimensional integration of technical ability and leadership ability. From the perspective of fusion theory, in the context of leadership,

technical ability and leadership ability can be transformed through interaction to generate information-based leadership of principals."

Understanding Information Leadership from the Perspective of Component Elements, American scholar David Preston (David Preston, 2007, p.39) believes that the information development strategy must conform to the overall development strategy of the organization, so leaders must have information planning and strategic decision-making capabilities. Harvard Business School professor Applegate (Applegate, 1992, p.176) pointed out that in the process of information construction, the role of leaders in promoting, managing and controlling is indispensable. Scholar Huo Guoqing (2008, p.39) pointed out that comparing the two concepts of information leadership and leadership literally, it can be found that although the difference between the two is only in information, in the environment of information, leaders, subordinates and The goals of all stakeholders change as the environment changes, not just the leadership environment. Scholar Jablokow (2010, p.152) proposed from the perspective of problem solving that leaders should have good communication and coordination skills, the ability to coordinate interdepartmental cooperation, and the ability to promote organizational change when leading information construction.

Based on the above definitions of the connotation of information leadership from different angles, it is reasonable to define information leadership no matter from the perspective of capability and process, First of all, leadership ability is the external manifestation of the elements of leadership. Therefore, the perspective of elements and the perspective of ability are dialectically unified to some extent. Secondly, leadership is manifested in the leadership process. Without the leadership process, there will be no opportunity to demonstrate leadership. Therefore, the perspective of ability and the perspective of process should not be separated, but should be integrated. However, from the different expressions of information leadership in domestic and foreign academic circles, it can be found that Chinese and Western scholars have a certain degree of difference in their understanding of information leadership, and there are differences in Western ways of thinking. The way of thinking of Western scholars generally starts from the micro level and then rises to the macro level, emphasizing the role of the individual and the part, and

sometimes "arbitrarily" replacing the whole with the part. Therefore, in Western academic circles, Western scholars believe that as long as technology and leadership are combined, they can be collectively referred to as "technical leadership". The Chinese way of thinking is different. In my country's academic circles, scholars often look at things from the macro level and then refine to the micro level, emphasizing the role of wholeness and harmony. In China, scholars usually study and examine "information" as a whole. In particular, it is believed that "transformation" reflects a dynamic process, emphasizing the responsibility and role that principals should assume in promoting the construction and development of school information technology in order to adapt to the development and changes of information technology. Based on the above content discussion, this study decomposes the main elements of the definition of information leadership by all researchers, so as to better summarize the core content of information leadership design, and makes the following statistics:

Bass (1985, p.45) Keywords include Charm—inspired leadership, intellectual stimulation, personalized care.

Hallnger & Murphy (1986, p.67) Keywords include Define school mission, manage curriculum and instruction, create positive school climate, promote teacher professional development, supervise and evaluate teaching.

Yee (2000, p.39) Keywords include Information appeal, information decision-making ability, information technology foresight, information teaching application ability, and innovation and development ability in response to information teaching.

National Educational Technology Standard NETS·A (2003, p.33) Leadership and Vision, Teaching and Learning, Productivity and Professional Practice, Support, Management and Operations, Evaluation and Evaluation, and Social, Legal and Ethical Issues.

Avolio & Kahai, SS (2003, p.78) Keywords include Capabilities and qualities in information technology and digital transformation. Ability to guide and motivate teams, organizations and institutions to achieve success.

National Principal Standards (UK) (2004, p.257) Keywords include Strategic planning, vision sharing, information technology skills and knowledge.

The Ministry of Education issued the standards for managers of primary and secondary schools (2004, p.187) Keywords include 5 dimensions of information literacy and information awareness, school information vision planning and financial and technical support, utilization and management of information teaching resources, interpersonal relationship and communication skills in an information environment, school information evaluation and teacher professional development.

National College for School Leadership, NCSL (2006, p.48)Keywords include Vision planning, information technology application and information evaluation

Wu Jingsong (2007, p.56) Keywords include Awareness and attitude, knowledge and skills, application and innovation, social responsibility.

Yang Rong ,et al. (2007, p.28) Keywords include The ability of information system planning, the leadership ability of information application, the leadership ability of people in information education, the construction ability of information culture and the internal information literacy of principals.

Xiao Yumin (2008, p.73) Keywords include School information development planning, creation of information teaching environment, establishment and implementation of certain technology use standards and accountability system, have successfully promoted the ability to effectively use technology in all aspects of the school.

National Educational Technology Standards for Administrators (USA) (2009, p.98) Keywords include Visionary Leadership, Learning Culture in the Digital Age, Excellence in Professional Practice, Systematic Improvement, Citizenship in the Digital Age.

Xie Zhongxin & Zhang Jiping (2009, p.69) Keywords include Information awareness and information technology ability, information decision-making and planning ability, information organization and management ability, information evaluation and development ability, school information application and school information basic factors.

Hua Fang & Yang Xiaohong (2010, p.57) Keywords include Basic information literacy, information system planning ability, information application guidance ability, information management evaluation ability, information communication and coordination ability and information regulatory construction ability.

J Murphy (2011, p.71)Keywords include Leader experience, knowledge base, personality traits, leadership values and beliefs.

Wu Haiyan & others (2011, p.47) Keywords include Organize and formulate the school's information plan and vision, create an information environment, pay atention to the improvement of teachers' information application level, be familiar with evaluation and evaluation work, and strengthen internal and external communication for the school's information work.

Xie Zhongxin, et al (2012, p.56) Keywords include Basic factors of school information, application of school information.

Ng ,et al. (2012, p.91) Keywords include Encourage teachers' emotional leadership in the application of information teaching, promote teachers' information leadership, the ability to develop teaching professions, and resource management capabilities to support information development.

Wang Jie & others (2013, p.37) Keywords include Planning ability, application ability, construction ability, management ability, evaluation ability.

Essential Skills Framework for Primary and Secondary School Teacher Chief Technology Officers (USA) (2013, p.245) Keywords include Leadership and vision, understanding the educational environment, managing technology and support resources.

Zhu Zhiting (2013, p.68) Keywords include Information technology knowledge and skills, ability to understand and apply information technology, information management level.

Department of Teacher Work, Ministry of Education (2014, p.44) Keywords include Information technology capability, information planning ability, information management ability, information evaluation ability.

Sun Zhenxiang, et al. (2014, p.49) Keywords include Information vision planning, information teaching and learning, information environment construction, information management, information evaluation, information communication and coordination ability, information literacy.

Xu Yanglin& Sun Zhenxiang (2014, p.37) Keywords include Personal influence, school information guarantee, information sharing, school information hardware facility construction, school information application and management, school information human resources construction, school digital education resource construction.

Information Leadership Standards for Primary and Secondary School Principals (2014, p.57) Keywords include Planning, design, organization and implementation, evaluation and promotion.

Specifications for digital campus construction of vocational colleges (2015, p.48) Keywords include The ability to recognize the value of information, the ability to control information work, and the ability to evaluate information performance.

Dong Yan & others(2015, p.42) Keywords include Comprehension of the connotation of information-based teaching, ability to plan information-based teaching goals, understanding of information-based teaching activities, clear goals, information-based awareness, and personality charm.

Li Chaoping (2015, p.82) Keywords include Virtuous conduct, vision motivation, leadership charisma, individualized care.

Zheng Jinzhou,,et al.(2015, p.67) Keywords include The school's common teaching vision, teacher motivation and other related situational factors, organizational culture and relationship between cadres and groups, organizational culture related to teacher teaching development, connection with society, family and community.

Cao Anqi (2016, p.44) Keywords include Information skills, information communication and coordination, information evaluation, information planning, information environment construction, information teaching reform, information team building.

Zhao Leilei& Dai Ruihua (2016, p.46) Keywords include Information planning ability, information construction ability, information management ability.

American International Educational Technology (2017, p.33) Keywords include Leadership and Vision, Learning and Teaching, Productivity and Professional Practice, Assistance, Management and Operations, Assessment and Evaluation, Social, Legal and Ethical Issues.

Zhao Leilei (2017, p.34) Keywords include Information technology ability, planning ability, management ability, evaluation ability.

Zhang Hong (2017, p.71) Keywords include Information literacy, information foresight, information technology application ability, information force assessment ability, and social responsibility for information.

Lu Yan (2018, p.29) Keywords includeInformation decision-making and planning ability, information environment construction ability, information literacy, information execution ability, information evaluation ability, information teaching guidance.

Yang Xin (2018, p.32) Keywords include Information literacy, the foresight of information-based teaching, the appeal of information-based teaching, the influence of information-based teaching, the power of decision-making in information-based teaching, and the power of information-based control.

Zhang Jianhong & Jiang Shuhui (2018, p.18) Keywords include Clear goals, controllable management, process correlation, expected effect, and deadline.

Zhang Yihua (2018, p.59) Keywords include Vision, planning and management, personnel development and training, technology and infrastructure support, evaluation and research, interpersonal and communication skills.

Su Linmeng (2019, p.67) Keywords include External environment, information communication ability, information technology application ability.

Wang Youmei (2019, p.42) Keywords include Information technology awareness and attitude, information technology knowledge and skills, information technology integration and application, information technology planning and evaluation, information ethics and norms

Zhang Yan (2019, p.40) Keywords include School information system planning, school information environment construction, school information personnel training, school information management, school information development evaluation.

Zhao Xiaowei & others (2019, p.67) Keywords include Information awareness, information teaching support ability, information decision-making and planning ability, information atmosphere creation ability, information management evaluation ability.

Duan Chunyu (2020, p.31) Keywords include Vision planning, professional development, facility provision, instructional evaluation, interpersonal communication and technology ethics.

Wang Shuhua & others (2020, p.9) Keywords include Vision motivation, leadership style, organizational atmosphere, leadership charisma.

Wang Yongjun (2020, p.43) Keywords include Vision planning, strategy formulation, interest coordination, evaluation strategy, implementation plan.

Yu Tianzhen (2020, p.47) Keywords include Leadership traits (ability, knowledge, sense of responsibility, social interaction, personal status, participation ability), information communication and collaboration ability, information decision-making and planning ability, information atmosphere creation ability.

Zheng Luhong,et al. (2020, p.57) Keywords include Execution ability, guidance ability, communication ability, planning ability, evaluation ability, personal information literacy.

Lei Lihua,et al. (2021, p.60) Keywords include Planning ability (information awareness), decision-making ability (information attitude), leadership ability (information knowledge), guidance ability (information ethics), evaluation ability (information ability).

Wang Shuhua (2021, p.14) Keywords include Personality Traits, Information Technology Knowledge and Skills, Information Ethics and Supervision Information Technology Integration and Application, Information Technology Awareness and Attitude, Innovation Awareness and Practice, Planning Significance and Evaluation.

Sun Jingya (2022, p.32) Keywords include Leadership traits, personal abilities, organizational environment, social environment.

Zhang Lele & Zhang Tianqi (2022, p.17) Keywords include From the ability of information environment construction, information vision planning ability, information management ability, information teaching application ability.

Wang Shiyun (2022, p.35) Keywords include Information technology ability, information planning ability, information management ability.

Qi Xiaohui (2022, p.24) Keywords include Information literacy analysis, information communication ability analysis, information management ability analysis, information planning ability analysis, information construction ability analysis, information evaluation ability analysis, information vision planning and innovation ability analysis.

Shi Wenxin (2023, p.56) Keywords include Information awareness and information literacy, information development planning ability, information resource construction

Zhang Liguo.et.al (2023, p.37) Keywords include Sustainable development system maintainer, information vision planner, smart campus builder, empowered teacher leader, digital citizen literacy advocate, lifelong learning demonstrator.

According to the above table, the statistics of information leadership include elements, and the frequency of keywords whose word frequency is the top 30 is shown in the table:

Table 2.1 Keyword Frequency for Information Leadership

No	Key words	Frequency	No	Key words	Frequency	No	Key words	Frequency
1	Information	116	11	the construction	16	21	organize	9
2	ability	92	12	analyze	14	22	Knowledge	7
3	planning	31	13	literacy	13	23	society	7
4	manage	21	14	evaluate	13	24	major	7
5	information	18	15	environment	13	25	technology	6
6	vision	18	16	develop	13	26	decision making	6
7	teaching	17	17	lead	12	27	Skill	6
8	Evaluate	17	18	consciousness	10	28	excitation	5
9	application	17	19	communicate	10	29	coordination	4
10	information Technology	17	20	thinking	9	30	Digitizing	4

According to the above frequency and content relationship, combined with the previous literature, the concept of information leadership includes the following 8 main elements: information vision and planning, information management ability, information environment, information communication and coordination, evaluation and decision-making ability, personal technical literacy, information application ability, innovation and creativity, etc. 8 elements. Based on the reclassification of the 8 elements, combined with the information leadership, the frequency of the 8 elements is re-stated, as shown in Table 2.2:

Table 2.2 Frequency of Information Leadership

No	Vision strategy	management ability	Envirnmental factor	Teamwork ability	evaluation decision	technical literacy	Application Ability	Creativity
1		√		√				
2	√			√				
3	√				√		√	√
4	√	√			√			√
5				√		√		
6	√		√		√			
7	√		√	√	√	√	√	
8	√				√		√	
9		√				√	√	√
10	√	√				√	√	
11	√		√		√			
12	√					√		
13	√	√			√		√	
14	√	√		√	√	√	√	
15		√				√		
16	√			√	√			
17			√				√	
18		√	√	√			√	
19	√	√	√		√		√	
20	√	√	√					
21		√				√	√	
22		√			√	√		
23	√	√	√	√	√	√		
24		√	√				√	
25	√	√		√	√			
26				√	√	√		
27	√			√		√		
28	√	√		√				

Table 2.2 (Continue)

No	Vision strategy	management ability	Envirnmental factor	Teamwork ability	evaluation decision	technical literacy	Application Ability	Creativity
29	√	√	√	√				
30	√			√	√	√		√
31	√	√	√					
32	√	√			√			
33	√	√			√	√		
34	√		√		√	√	√	
35	√		√	√	√	√		
36	√	√		√		√		
37	√	√	√		√			
38	√	√	√	√	√			
39			√	√			√	
40	√				√	√	√	
41	√	√	√		√			
42	√			√	√	√	√	
43	√		√	√	√	√		
44	√	√		√		√		
45	√	√		√	√			
46	√		√	√		√		
47	√			√	√	√		
48	√	√			√			
49	√	√			√	√	√	√
50		√	√			√		
51	√	√	√				√	
52		√	√			√		
53	√	√	√	√	√	√		√
54	√		√			√		
55	√		√	√		√		
Total	**44**	**34**	**26**	**27**	**30**	**31**	**18**	**6**

According to the statistics of the key elements in Table 2-3, vision and planning strategy (frequency 44), management ability (frequency 34), personal accomplishment (frequency 31), evaluation and decision-making (frequency 30), cooperation and communication (frequency 27), environmental elements (frequency 26), and technology application (frequency 18) are more frequent. Based on the previous literature, select 5 important elements and integrate some elements as important elements selected for this research, vision and planning strategy, leadership traits (mainly including management ability), environmental factors, teamwork ability, data-driven decision-making (including technical literacy and evaluation decision-making, etc.). Let's look at the concept and specific content of these 5 elements in detail.

Wang Yongjun. (2020, p.66). Vision and strategy refers to the process of setting, planning and describing the future development of school information, the future of the team or the long-term goals of individuals. It is a long-term strategic plan that aims to describe the ideal future state of the unit, articulates the vision and goals, and guides the actions taken by the organization or individual in the process of achieving these goals. The importance lies in the fact that it can inspire consensus and cooperation among members of the organization, help them understand common goals and values, and unite under a common vision. At the same time, vision planning also provides the organization with a long-term development direction and strategy, so that it can better respond to changes and challenges, and continue to innovate and progress. Including factors such as vision, decision-making planning, school mission, clear goals, strategy formulation, and information foresight.

Sun Jingya. (2022, p.24). Pointing out that information leadership includes leadership traits, and the elements of leader traits include cognitive ability, personality orientation, motivation and values, social assessment skills, problem-solving skills, and comprehensive specific expertise, etc., Mumford, Zaccaro , Harding, Fleishman, and Reiter-Palmon (1993, p.26), and Mumford, Zaccaro, Harding, Jacobs, and Fleishman (2000) studied the types of leadership qualities. Specifically, it refers to the personal characteristics and abilities of leaders in the process of promoting and guiding the development of organizational information in information leadership.

These characteristics help leaders to play a better role in the information age and lead organizations to successfully meet the challenges of digital and technological change. Information leadership is not a temporary task. Leaders should have continuous leadership, be able to guide the organization on the road of information, and ensure the continuous implementation and improvement of information strategies. These characteristics are not static, but with the development of information technology Different stages of evolution and organizational development may require constant adjustments and enhancements. Leaders should constantly reflect and improve themselves to better adapt to the leadership challenges of the information age. The elements include innovation awareness, learning ability, executive ability, risk management, suitablity and sustainability, management ability, application ability, cognitive ability, personality traits, charisma, influence, leadership values and beliefs, social responsibility and other factors.

Levin, T. & Schrum, L. (2013, p.53). Point out that environmental factors have a greater impact on information leadership. Environmental factors mainly refer to school culture, faculty quality, school resources, decision-making mechanism and management system, information strategy and planning, organizational structure and communication mechanism, school leadership team and other factors. The external environment mainly refers to national and regional policies, economy, leadership team, campus cultural atmosphere, learning ability (Xie Chao, 2015, p.61), national and regional policies related to information technology, local and financial investment in school information technology software and hardware, and the school itself Factors such as investment in information and teacher support also have a significant impact on principals' information leadership. Leadership is changed by environmental changes, national culture, leader team culture and cohesion, etc. These environmental factors can have a significant impact on a leader's decision-making, strategy formulation, and actions, so understanding and adapting to them is critical to successfully driving information transformation. Environmental factors in information leadership mainly include technical environment, organizational atmosphere, system and policy, facility supply, economic and market environment, social law and morality, organizational structure, resource construction, school atmosphere,

technology and infrastructure support, etc., Information leaders can better develop strategies, plan and implement information projects, and ensure better results in the era of digital transformation.

Zheng Luhong,et al. (2020, p.75). In the concept, it is pointed out that the main element of information leadership is of teamwork ability, and the ability of cooperation and communication mainly refers to the ability of leaders to effectively communicate with team members, stakeholders and other relevant parties in the process of promoting information. Ability to collaborate and communicate. In the information age, the wide application of digital technology and the complex interaction inside and outside the organization make collaboration and communication an important factor in promoting the development of information technology. Cooperative communication should have elements such as teamwork ability, effective communication skills, open communication, cross-departmental collaboration, stakeholder management, cross-cultural communication, and establishment of effective communication channels. Cooperative communication ability is an important part of information leadership , it helps leaders to work closely with team members, enhance understanding and trust, improve the success rate of information projects, and promote the organization to achieve good results in the digital age. Including factors such as coordination, communication, exchange, care, interest coordination and so on.

Shao, Y., & Puron-Cid, G. (2020, p.76), Lee, J., & Choi, H. (2017, p.67), Anderson, J., & Dexter, S. (2005), Wolf, M. A., & Zhao, Y. (2021), Hallinger, P., & Bryant, D. (2013, p.35), Henriquez, A. S. (2016). They all discussed that information-based leadership includes data-driven decision-making. When making decisions, act based on valid data and analysis. With the continuous development of information technology, organizations can collect and analyze a large amount of data, which can be used to understand the trend of education and teaching management, the needs of teachers and students, school business conditions, financial conditions, social concerns and other information. Data-driven decision-making capabilities are the key elements for information leaders to succeed in the digital age. The core is to make informed strategic decisions based on data and analysis, rather than relying solely on

subjective opinion or intuition. The main elements include data collection and integration, data analysis and insight, information decision-making ability, information literacy and information awareness, data security and privacy, technical literacy, information evaluation ability, etc. By making decisions driven by data, leaders can be more objective Make decisions scientifically, reduce subjective bias and risks, and improve the accuracy and effectiveness of strategies, so that in the information age, school decision-making efficiency can be faster, more accurate and better, thereby improving school quality.

According to the summary, the elements of information leadership in this study are mainly vision planning, leader characteristics, environmental elements, collaborative communication skills, and data-driven decision-making skills.

The Concept of Information Leadership for Principals refers to their ability to harness and manage information and technology to effectively guide and inspire educational institutions. It involves utilizing data-driven insights, fostering a culture of digital innovation, and making informed strategic decisions to enhance teaching, learning, and overall educational outcomes.

Context of High School in Guangxi

high school in Guangxi refers to the secondary education schools located in Guangxi Zhuang Autonomous Region, China, covering junior high school and high school stage. The research object is mainly senior high school. Guangxi high schools are usually ordinary public schools, aiming to provide students with comprehensive subject education and quality training. These schools generally follow state-mandated educational curricula and syllabi to ensure that students receive an education that meets state standards. There are 271 senior high schools in Guangxi. The forms of running schools are mainly education departments, other departments, and private schools. All schools are connected to the Internet. The main forms of teacher training are centralized training, remote training, and on-the-job practice. The number of high school boys is 252,137. The number of high school girls is 271,238. The specific data are as follows:

Table 2.3 Number of High Schools in Guangxi

Information	City	2nship	Countryside	Total
number of schools	129	136	10	271
number of classes	13714	6128	149	19991
Number of staff	25146	29879	665	55690
Number of dedicated teachers	22399	26754	511	49664
Number of computers	51857	48182	1712	101751

Various cities in Guangxi have problems such as uneven distribution of middle school education resources, shortage of high-quality resources, shortage of high-level teachers, and difficulty in making up for the shortcomings of high-quality education resources in private education. The distribution of high-quality middle school education resources in various cities is uneven. The distribution of demonstration high schools in Guangxi presents the characteristics of "more in the north and less in the south". As of July 2021, Nanning City has the largest number of demonstration high schools in the region, with a total of 26 (see Figure 3), accounting for 16.7% of the region. Followed by 19 in Guilin, 16 in Liuzhou ranked third. The number of demonstration high schools in Baise City is 14, equivalent to the sum of the number of demonstration high schools in Qinzhou, Beihai and Fang Chenggang in the southern coastal cities. The distribution of educational resources is unbalanced, and the difficulty of obtaining high-quality education is uneven. First, there are differences in the difficulty of obtaining high-quality educational resources between cities. Candidates in different cities have different difficulties in being admitted to exemplary high schools. Taking Yulin City as an example, Yulin City has the second largest population in Guangxi with 5,796,800 people, but the number of model high schools is only 11, which is even lower than the 13 schools in Hechi City (with a total population of 3,417,900 people). The competition coefficient of Yulin City's exemplary high school enrollment places [calculated by the Autonomous Region Big Data Research Institute based on the number of applicants for the senior high school entrance examination and the number of enrollments of each exemplary high school]

is 6.1, which is equivalent to about 6 candidates competing for each quota, which is much higher. In Baise City (3.6), Nanning City (3.4), Hechi City (2.8) and Qinzhou City (2.5); Second, the quality of high school teaching in different regions varies greatly. At present, the quality of education in Nanning, Liuzhou and Guilin ranks among the top in the region. In the 2020 college entrance examination, many well-known high schools in Nanning, Liuzhou and other places have a pass rate of more than 80%, while many model high schools in many cities have a pass rate of less than 50%.

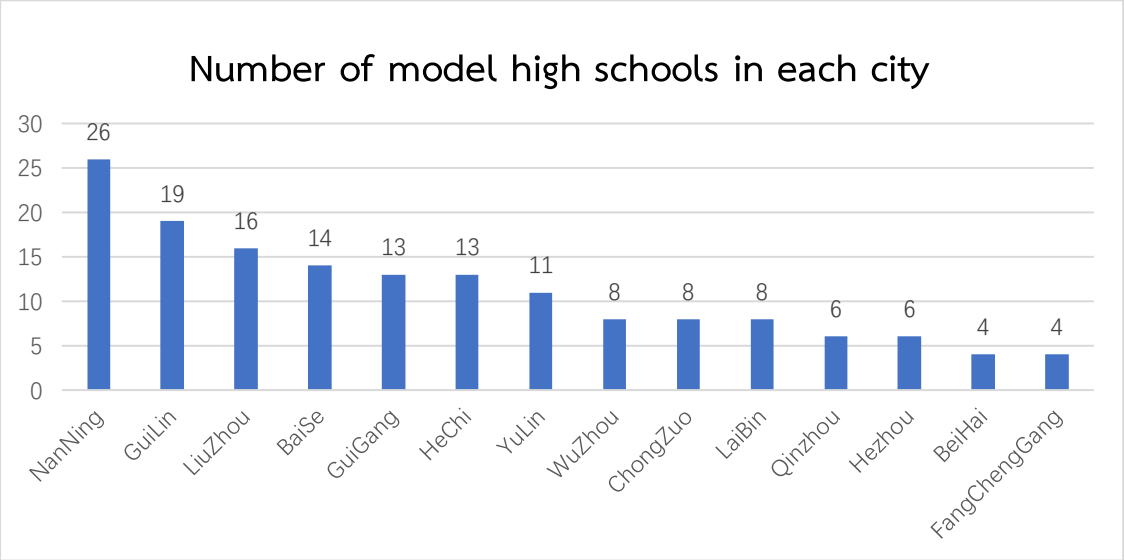

Figure 2.2 Number of high schools in each city

There is a structural shortage of high-quality educational resources in urban and rural areas. The educational disparity between the same cities still plagues the masses of the people. The shortage of high-quality high school education resources, coupled with the different strengths of education investment among different districts and counties in the same city, has caused urban residents and people in counties and villages around the city to suffer from "difficult to learn". First, the time point of investment data for high school education projects in education investment is from January 1, 2018 to July 31, 2021. The data is compiled by the Autonomous Region Big Data Research Institute based on relevant data from the Guangxi Project Investment Online Approval and Supervision Platform, with emphasis on cities Central urban

areas, counties and townships have relatively poor high school resources. High schools located in the central urban area of the city often enjoy financial investment at the city level and the district level. In contrast, high schools located in surrounding counties often can only rely on the funding support of their own county, and there is a large gap in education investment between inner and outer urban areas. Taking Nanning and Hechi City as examples, high school education in the main urban area of Nanning City (the urban area of Nanning City is Qingxiu District, Liangqing District, Suining District, Xixiangtang District, Xingning District and Jianugnan District) The project investment is 5.9 times that of the surrounding districts and counties. The investment in the high school education project in the downtown area of Hechi (Jinchengjiang District) is far greater than that of Yizhou District, Fengshan County, Luocheng County and Duan County under its jurisdiction. sum of counties. The second is "difficult to study well", which stumps county and township students as well as urban candidates. Although the high-quality education resources in the central urban areas are more abundant than those in surrounding districts and counties, as the population of Guangxi has further concentrated in urban areas such as Nanning and Liuzhou in recent years, the pressure of competition for high-quality high school education resources has also increased. The competition coefficient for candidates in Nanning City to enter the model high schools in the city is maintained at above 4 all year round, and will reach 4.08 in 2021. In 2021, the competition coefficient for candidates in Liuzhou City to pass the model high schools in the city will reach 4.8. Compared with Nanning and Liuzhou, the competition coefficient for candidates in Guilin urban area to enter the model high school in the urban area is only 2.74. High-quality education resources in cities such as Nanning and Liuzhou are still relatively scarce.

There is a lack of high-level teachers at the middle school level. At present, the number of part-time teachers in ordinary middle schools in our district is huge, ranking second in the country in total. This reflects the shortage of human resources in the education industry in Guangxi. "Guangming Daily" stated that in some remote mountainous primary and secondary schools in Guangxi, some subject teachers have become "general subject teachers", and there are frequent "cross-border phenomena" such as physical education teachers teaching Chinese, mathematics teachers teaching

science, and Chinese teachers teaching music. There are many reasons. First, the treatment in Guangxi's education industry is generally low, and there are still regional differences. The mean annual salary of the education industry in Guangxi is only 77,881 yuan (the salary data of the education industry comes from the "2020 Guangxi Statistical Yearbook"), which is far lower than the national mean of 97,681 yuan. There are also large differences in the mean salary of the education industry in various cities. Among them, the salary of the education industry in Nanning is the highest, reaching 88,710 yuan, followed by Liuzhou, which is 84,914 yuan, and Hezhou is the lowest, only 66,763 yuan, which is 32.9% less than Nanning. As a result, teacher resources are concentrated in a few cities, which expands the educational imbalance between different cities. Second, there is a shortage of teachers with high professional titles and high education. Taking high school teachers as an example, on the 1 hand, in 2019, there were 4,242 general high school teachers with postgraduate degrees in the district, accounting for only 6.7% of the general high school teachers in the district, ranking 24th in the country. In 2021, Nanning and Guilin will openly recruit teachers for primary and secondary schools, and only 1 or 2 high school teacher positions require a postgraduate degree. On the other hand, the proportion of teachers with senior professional titles in Guangxi is 20.6%, ranking 29th in the country. The small number of teachers' professional title indicators will impose greater restrictions on the long-term career development of individual teachers, making it difficult to attract teaching talents.

The characteristics of Guangxi Senior High School mainly include:

Diversity: Guangxi is a multi-ethnic and multi-cultural region. Therefore, Guangxi Middle School pays atention to the integration of multiculturalism in educational content and teaching, and respects and inherits the excellent cultures of various ethnic groups.

Emphasis on cultural inheritance: Guangxi Middle School attaches great importance to the inheritance and development of the language, history, and traditional culture of the Zhuang, Yao, and Miao ethnic minorities, and strengthens ethnic education and ethnic unity education.

Educational resources: There are middle schools in both cities and villages in Guangxi. Urban middle schools usually have relatively complete facilities, while rural middle schools are located in areas where educational resources are relatively scarce, and the school conditions may be relatively simple.

Language education: In addition to Putonghua (Mandarin Chinese), Guangxi Middle School will also focus on cultivating students' local dialects such as Zhuang and Cant1se.

Quality education: Guangxi Middle School also pays atention to cultivating students' comprehensive quality in teaching, including ideology and morality, physical health, art, practical ability, etc.

Examination education: Middle school students in Guangxi usually have to take the college entrance examination (the national unified entrance examination for ordinary colleges and universities).

Related Research

The framework's potential to guide school leaders in developing technology competencies, implementing professional growth plans, collaborating with their community, and providing daily technology leadership, mentorship, and advocacy for teachers in elementary schools is discussed by Linda Flanagan and Michele Jacobsen (2014, p.46). The analysis results reveal that principals consider competencies across leadership domains crucial for effective technology leadership, while teacher respondents exhibit varied views on requisite competencies. Notably, principals and teachers hold significantly different perspectives, whereas elementary and secondary teachers share similar viewpoints. Educators should consider these differing perceptions when planning technology integration, staff development, and technology support in schools.

Chang et al. (2015, p.55) identified four constructs (vision, staff development, infrastructure support, evaluation, and research) that comprise principals' technology leadership. The findings also emphasize the importance of interpersonal and communication skills for overall effective technology leadership. Fourthemes emerged from the transcript data, highlighting practical problems principals face in

implementing technology leadership in schools: budget shortage, technology facilities, staff development, and leadership issues. The results suggest that principals embracing technology can effectively lead their schools to acquire educational resources, enhancing student engagement and learning. However, the lack of up-to-date resources, poor technical support, time constraints, and unfamiliarity with integrating technology across the curriculum were identified as impediments, affecting the quality of pedagogical leadership. The research underscores the need to consider alternative models of support and leadership.

Köksal BANOĞLU (2014, p.23) found that school principals exhibit a significant level of adequacy for technology leadership (M = .85, SD = .54), with the lowest value in the "leadership & vision" dimension (M = .78, SD = .68) compared to other dimensions. Female school principals were found to be more adequate in the "leadership & vision" dimension than their male counterparts ($p < .05$). Schools with information technology coordinator teachers were more adequate in the "learning & teaching" dimension of technology leadership ($p < .05$). The findings indicate that school principals face various challenges in assuming their roles as technology leaders, including bureaucracy, lack of resources, resistance to innovation, lack of in-service training, and poverty. Recommendations are made to diminish bureaucratic obstacles and organize sustainable in-service training activities to overcome these challenges.

Hong et al. (2015, p.38) found that greater technology anxiety was negatively associated with perceived ease of using (PEU) IT, while implicit learning ability was positively correlated with perceived usefulness of IT. Technology leadership increased significantly with PEU and perceived usefulness (PU), and it is also associated with the intention to overcome difficulties in promoting information technology in schools. Participants completed a researcher-developed instrument comprising selected demographic data and the Principals Technology Leadership Assessment (PTLA). Results indicated no significant differences in PTLA ratings based on administrator gender, age, years of experience, grade level, district size, or degree earned.

Nur Ain Wong Abdullah et al. (2015, p.81) highlighted the importance of principals' leadership qualities, attributes, and belief in the use of information and communications technology (ICT) to guide ICT utilization in schools. The study found differences between principals' and teachers' perceptions of teachers' abilities to integrate technology and their access to technology-related professional development. Additionally, principal technology-leadership proficiencies yielded significant positive correlations with teachers' abilities to integrate technology and their access to technology-related professional development.

The research conducted by Kathryn L. Draper (2015, p.39) underscores a high frequency of technology productivity use among administrators and a strong belief in technology's positive impact on school settings. These findings emphasize the pivotal role of principals' perceptions in driving technology integration within schools. The survey results revealed robust technology leadership behaviors and diverse technology utilization in schools, with no significant correlation found between technology integration, school organizational health indicators, and student achievement. The analysis failed to support a relationship between urban school principals' technology behavior and the four organizational health dimensions linked to high student achievement.

Anantha Raj A. et al. (2015, p.91) discovered that school principals utilize computers for both instructional and administrative purposes, demonstrating moderate competence in computer applications and engaging in regular computer usage. Notably, cultural perceptions and transformational leadership significantly influence principals' computer use. The study anticipates fostering new research avenues and informing policy decisions by illuminating school leaders' readiness for ICT adoption. Consequently, policymakers are urged to design professional development programs, emphasizing transformational leadership components, to equip future administrators.

Leong Mei Wei et al. (2019, p.52) found that Negeri Sembilan secondary school teachers perceive their principals as exhibiting high levels of technology leadership and rate themselves as proficient in ICT. A statistically significant, moderately strong correlation exists between principals' technology leadership

practices and teachers' ICT competency. Notably, digital citizenship and systemic improvement are significant predictors of teacher ICT competency. However, no notable relationship was observed between principals' technology leadership and teachers' technology integration in selected Kedah schools, despite high levels of technology leadership and teacher technology integration.

Fermín Navaridas-Nalda et al. (2020, p.66) revealed that principals' perceptions of EDRs' usefulness are the most influential factor in schools' digital transformation. Other key factors include school context, technical support, and the principal's professional and personal profile. Educational policies should integrate principals' roles, considering age and teaching/leadership experience. Teachers agreed on principals' technological leadership, demonstrating proficiency in technology use. However, principals' technology leadership did not significantly impact teachers' technological proficiency. Further research is recommended to validate or refute these findings.

Siti Noor Ismail et al. (2021, p.39) found no gender-based differences in teachers' self-efficacy improvement. A moderate relationship exists between technology leadership and teachers' self-efficacy, with technology leadership influencing teachers' self-efficacy by 24%. Principals can bolster teachers' self-efficacy by encouraging ICT use. They should model technology-integrated pedagogy, supporting digital transformation and professional development. During COVID-19, principals' digital leadership was deemed adequate, contributing to a digital learning culture. Their digital leadership skills encompass technology use, managerial, and individual skills, crucial for K-12 digital transformation.

Izhak Berkovich & Tahani Hassan (2022, p.57) supported mediation in their exploratory study, acknowledging limitations yet offering valuable insights. The study highlights the significance of hybrid schooling and digital instructional leadership in contemporary principalship. Teachers perceive their principals' technology leadership as sufficient, with principals enabling technology use, establishing infrastructure, safeguarding against cybercrime, and motivating teachers.

Li Ming (2020, p.35) This article by Li Ming explores the pivotal role of information leadership in advancing school infoumation. Drawing on empirical research and case studies, it highlights the importance of school principals and administrators possessing strong information leadership skills. The author argues that effective information leadership entails strategic vision, innovative thinking, and the ability to foster a culture of technology integration within educational institutions. The study concludes that investing in the development of information leadership among school leaders is crucial for enhancing the overall quality of education and promoting the successful implementation of infoumation initiatives.

Jane Smith (2021, p.92)Jane Smith's article focuses on strategies for enhancing information leadership capabilities in today's digital landscape. The author emphasizes the need for leaders to develop a comprehensive understanding of emerging technologies and their potential impact on organizational operations. The article outlines key competencies required for effective information leadership, including strategic planning, data analytics, and change management. Through case studies and practical examples, Smith provides insights into how leaders can harness the power of information technology to drive innovation, improve decision-making, and enhance organizational performance.

David Johnson (2022, p.102) David Johnson's comparative study examines information leadership practices in higher education institutions across different countries. The research identifies common themes and variations in the way universities approach infoumation, focusing particularly on the roles and responsibilities of academic leaders. Through interviews and surveys, the author reveals the importance of strong information leadership in facilitating collaboration, promoting innovation, and ensuring the effective use of technology in teaching, learning, and research. The study concludes with recommendations for improving information leadership practices in higher education to better align with the demands of the digital age.

Sarah Williams (2023, p.95) Sarah Williams' article discusses the critical role of information leadership in driving organizational transformation. The author argues that in an increasingly digital world, leaders must possess the skills and vision to

leverage technology to create competitive advantage and drive sustainable growth. The article explores the various dimensions of information leadership, including strategic alignment, cultural change, and talent development. Through analysis of real-world examples, Williams demonstrates how effective information leadership can transform organizations, enabling them to adapt to changing market conditions and thrive in the digital economy.

Mark Thompson (2023, p.123) Mark Thompson's article addresses the challenge of evaluating the effectiveness of information leadership in the public sector. Drawing on a mixed-methods approach, the study examines the factors that influence the success of information leadership initiatives in government agencies. The author identifies key metrics for assessing leadership performance, including the extent to which technology is integrated into decision-making processes, the quality of data analytics, and the overall impact on service delivery and public trust. The study concludes with recommendations for improving evaluation frameworks and enhancing the capacity of public sector leaders to lead effective infoumation efforts.

Emily Davis(2022,p. 56) In this article, Emily Davis explores the unique challenges and opportunities facing leaders in the information age. She argues that effective information leadership requires a blend of technical expertise, strategic vision, and interpersonal skills. Drawing on case studies from various industries, Davis presents strategies for navigating the complex landscape of information technology, including data governance, cybersecurity, and digital transformation. The article concludes with practical recommendations for leaders looking to enhance their information leadership capabilities.

John Doe(2020,p.123) John Doe traces the evolution of information leadership from its early roots in library science to its current prominence in the digital era. Through a historical analysis, he highlights key milest1s and influential figures who have shaped the field. The article examines the changing nature of information leadership, from managing physical collections to navigating vast digital landscapes. Doe concludes by discussing the ongoing challenges and future directions for the field.

Linda Brown (2019, p. 88) Linda Brown proposes a comprehensive framework for cultivating information leaders through professional development programs. The framework includes comp1nts such as technical training, strategic thinking, and leadership coaching. Brown argues that a multi-faceted approach is necessary to develop leaders who can effectively navigate the complex information landscape. The article outlines key steps for implementing the framework and provides examples of successful programs.

Michael Chen (2021, p.34) Michael Chen investigates the relationship between information leadership and organizational performance. Through a quantitative study of multiple organizations, he finds that strong information leadership is positively correlated with improved decision-making, innovation, and overall efficiency. Chen discusses the mechanisms through which information leadership exerts its influence and provides practical implications for organizations seeking to enhance their performance.

Sophia Lee (2018, p.77) Sophia Lee focuses on the role of information leadership in healthcare, where data-driven decision making is crucial. She examines the challenges faced by healthcare leaders in managing and leveraging vast amounts of patient data. The article presents strategies for building information leadership capacity within healthcare organizations, including the development of data analytics teams and the fostering of a culture of evidence-based practice. Lee concludes by discussing the potential benefits of these efforts for improving patient outcomes and reducing costs.

Junko Kimura (2023, p.156) Junko Kimura explores the diverse ways in which information leadership is practiced and understood across different cultures. Through a comparative analysis, she identifies common themes and unique differences in the values, beliefs, and practices of information leaders in various regions. The article discusses the implications of these findings for global organizations seeking to build effective information leadership teams. Kimura also provides recommendations for adapting information leadership strategies to different cultural contexts.

Alex Hunter (2017, p.110) Alex Hunter examines the critical role of information leadership in emergency response situations. He argues that effective information management is essential for coordinating resources, communicating with stakeholders, and making timely decisions. The article discusses the unique challenges faced by information leaders in emergency settings and presents strategies for overcoming them. Hunter also explores the role of technology in supporting information leadership efforts during emergencies.

Emma Thompson (2024, p.203) Emma Thompson investigates the gender dynamics of information leadership, highlighting the underrepresentation of women in senior information management roles. Through a mixed-methods study, she explores the factors contributing to this imbalance, including bias, lack of role models, and work-life balance issues. The article presents strategies for promoting gender diversity in information leadership, including targeted recruitment, mentorship programs, and flexible work arrangements. Thompson concludes by discussing the potential benefits of a more gender-balanced information leadership landscape for organizations and society as a whole.

Chapter 3

Research Methodology

This research focuses on strategies for developing information leadership for principal of high school in Guangxi, investigate the research status of information leadership for principal of high school in Guangxi, and provide guidance and evaluation basis for evaluating the suitability and feasibility of strategies for developing leadership for principal of high school. This study uses a variety of methods to study the strategies for developing information leadership for principal of high school in Guangxi. The reaesrcher have the follwing procedures.

1. The population / Sample group
2. Research Instruments
3. Data Collection
4. Data analysis

Phase 1: The objective of this phase is to study the current situation of information leadership for principal of high school in Guangxi

The Population / Sample Group

The Population

The population of this research included 271 principals from 271 high schools in Guangxi.

The Sample Group

According to Krejcie and Morgan (1970) sampling table, the sample group of this study included 159 principals from 271 high schools in Guangxi. The high school principals were selected by means of systematic random sampling and random sampling respectively in urban areas, townships and villages.

Table 3.1 Lists of high school and sample size

No	High School in Guangxi	Population	Sample group
1	urban area	129	75
2	town	136	79
3	rural	10	5
	Total	**271**	**159**

According to Table 3.1, it showed that the researchers randomly selected 159 principals from 159 high schools in urban area, town, rural in Guangxi, as a sample group.

Research Instruments

In this research, questionnaires, focus groups discussion and evaluation forms were used to evaluated the information leadership enhancement strategies of high school principals in Guangxi the researchers followed the following steps to proceed:

Questionnaire

The instrument to collect the data for objective 1, to study the current situation of information technology leadership among high school principals in Guangxi. The design of the questionnaire is based on 4 aspects of innovative leadership: 1) vision and strategy, 2) leader characteristics, 3) environmental factors, 4) teamwork ability, and 5) data-driven decision support. The questionnaire is divided into two parts:

Part 1: Survey about personal information survey of respondents classified by gender, age, length of service, educational background, major, location in Guangxi region, and school.

Part 2: Survey about the Current Situation of Informationization Leadership among High School Principals in Guangxi. The data interpretation criteria based on the 5 point Likert scale are as follows:

5 refers to the level of information technology leadership at the highest level 40

4 refers to the level of information technology leadership at a high level

3 refers to the level of information technology leadership at a medium level

2 refers to the level of information technology leadership at a low level

1 refers to the level of information technology leadership at the lowest level

The data interpretation for mean value is based on Rensis Likert (1932) information technology leadership The data interpretation is as follows:

4.50 – 5.00 refers to the highest level

4.50 – 5.00 refers to the highest level

3.50 – 4.49 refers to high level

2.50 – 3.49 refers to medium level

1.50 – 2.49 refers to low level

1.00 – 1.49 refers to the lowest level

Constructing a Questionnaire Process

the construction process of the questionnaire is as follows:

Step 1: Review and analyzing literature, concepts, theories, and research related to information leadership.

Step 2: Construct a survey questionnaire on the current situation of information leadership among high school principals in Guangxi. Then, the researchers sent the questionnaire outline to the paper advisor and reviewed and revised the content based on the suggestions.

Step 3: The index of objective congruence (IOC) of the questionnaire was examined by 5 experts. IOC=1.

Step 4: Revise the questionnaire based on the experts' suggestions.

Step 5: The questionnaires were distributed to 159 high school principals in Guangxi. The reliability of the questionnaire is determined by the Cronbach alpha coefficient. The reliability=0.975

Step 6: The questionnaire survey on 159 high school principals in Guangxi.

Data Collection

The data collection for objective 1: To study the current situation of information leadership for principal of high school in Guangxi, as following procedured:

Step 1: The researchers requested Bansomdejchaopraya Rajabhat University, a graduate school, to collect data from 159 high school principals in Guangxi.

Step 2: The researchers distributed the survey questionnaire to 159 principals. There are a total of 159 questionnaires.

Data Analysis

In this phase of data analysis, the researcher analyze the data by package program, as follows:

Step 1: The researcher personal information of the respondents was analyzed by frequency and percentage, classified by gender and educational background.

Step 2: The current situation of Using mean and standard deviation analysis, the current situation of information leadership among high school principals in Guangxi was analyzed in 5 aspects: 1) vision and strategy, 2) leader characteristics, 3) environmental factors, 4) teamwork ability, and 5) data-driven decision support.

Phase 2: The objective of this phase to develop strategies for developing information leadership for principal of high school in Guangxi

Key Information

Focus Group Discussion

The focus group experts for this study included 14 high school principals in Guangxi who met the following standards:1) At least 5 years of experience in high school management, 2) Have experience in information management, and 3) Have a bachelor's degree or above Evaluation team of developing strategies suitability and feasibility.

Research Instruments

Focus Group Discussion Form

The instrument to collect the data for objective two is to establish a strategy for enhancing the information leadership of high school principals in Guangxi. This study was designed in the form of a focus interview group based on 5 aspects of the current situation of information leadership among high school principals in Guangxi: 1) vision and strategy, 2) leader characteristics, 3) environmental factors, 4) teamwork ability, and 5) data-driven decision support. The focus interview is divided into two parts:

Part 1: the personal information of interviewees, classified by interviewee, interviewer, educational background, work experience, interview time, and interview date.

Part 2: the questions about suggestions for the current situation of information leadership among high school principals in Guangxi from 5 aspects: 1) Vision and strategy, 2) Leader characteristics, 3) Environmental factors, 4) Teamwork ability, and 5) Data driven decision support.

Constructing a Structured Interview Process

The construction process of the structured interview is as follows:

Step 1: Review and analyze the literature, concepts, theories, and research related to information leadership of high school principals in Guangxi.

Step 2: Construct the structured interview about 5 aspects, construct suggestions and strategies for improving the information leadership of high school principals. Interviews: 1) Vision and strategy, 2) Leader characteristics, 3) Environmental factors, 4) Team collaboration ability, and 5) Data driven decision support. Then send the outline of the focus interview group to the thesis advisor, and review and revise the content based on the suggestions.

Data Collection

The data collection for objective 2: To develop strategies for information leadership for principal of high school in Guangxi, as follows:

Step 1: The researchers requested Bansomdejchaopraya Rajabhat University, a graduate school, to send a request letter requesting an interview with 14 high school principals in Guangxi.

Step 2: The researcher interviews the 14 principal of high school principals in Guangxi 1 by 1 through online platforms or face-to-face interviews based on the convenience of the respondents.

Data Analysis

The structured interview about Using content analysis method, a structured interview was conducted on the strategies for enhancing information leadership among high school principals in Guangxi

Phase 3: The objective of this phase is to evaluate the suitability and feasibility of strategies for developing information leadership for principal of high school in Guangxi.

Key Information

Expert Group

The experts evaluating the suitability and feasibility of the guidelines are 11 from high schools and some universities in Guangxi. The expert qualifications are as follows: 1) At least 5 years of management work experience, 2) Engaged in information technology work, 3) Master's degree or above.

Research Instruments

Evaluation Form

The instrument to collect the data for study is objective 3, to evaluate the strategies for enhancing information leadership among high school principals in Guangxi. The evaluation table based on strategy design mainly formulates strategies for enhancing the information leadership of high school principals in Guangxi from the following 5 aspects: 1) vision and strategy, 2) leader characteristics, 3) environmental factors, 4) teamwork ability, and 5) data-driven decision support. The evaluation form is divided into two parts:

Part 1: The personal information of respondents, classified by job position, work experience, educational background, and professional title.

Part 2: The evaluation Table for Information Leadership Enhancement Strategies for High School Principals in Guangxi. The data interpretation criteria based on the 5 point Likert scale are as follows:

5 refers to the suitability and feasibility of the strategy at the highest level

4 refers to the suitability and feasibility of the strategy at a high level

3 refers to the suitability and feasibility of the strategy at a medium level

2 refers to the suitability and feasibility of the strategy at a low level

1 refers to the suitability and feasibility of the strategy at the lowest level

The data interpretation of the mean is based on Rensis Likert (1932). The data is explained as follows:

4.50-5.00 refers to the highest level

3.50-4.49 refers to high-level

2.50-3.49 refers to medium level

1.50-2.49 refers to low level

1.00-1.49 refers to the lowest level

Constructing an Evaluation Form Process

The construction process of the evaluation form is as follows:

Step 1: Construct an evaluation table for enhancing information leadership strategies for high school principals in Guangxi.

Step 2: The evaluate 11 high school principals and university professors and experts.

Data Collection

The data collection for objective 3: to evaluate strategies for enhancing information leadership among high school principals in Guangxi, as follows:

Step 1: The researchers requested Bansomdejchaopraya Rajabhat University Graduate School to send a request letter inviting experts to evaluate the strategy.

Step 2: The researchers will distribute the evaluation form to the experts. There are a total of 11 evaluation forms.

Data Analysis

The data analysis in this research, the researcher analyzes the data by package program, as follows: the suitablity and feasibility of information leadership enhancement strategies for high school principals in Guangxi were evaluated using mean and standard deviation.

Chapter 4
Data Analysis Results

Strategies for developing information leadership for principal of high School in Guangxi. The objectives of this research are 1) To study the current situation of information leadership for principal of high school in Guangxi, 2) To develop strategies for information leadership for principal of high school in Guangxi, 3) To evaluate the suitablity and feasibility strategies for developing information leadership for principal of high school in Guangxi. The data analysis result can be presented as follows

1. symbols and abbreviations
2. Presentation of data analysis
3. Results of data analysis

The details are as follows.

Symbols and Abbreviations

N refers to population

n refers to sample group

$\bar{x}$ refers to mean

S.D refers to standard deviation

Presentation of Data Analysis

Part 1: The results of the analysis of respondents' personal information, which is categorized by gender, age, tenure time, education level, specialty, unit area and unit, and the data are presented in the form of frequency and percentage.

Part 2: Analysis of the current situation of information leadership for principal of high school in Guangxi.

1. Questionnaire of information leadership for principal of high school in Guangxi is analyzed in the form of mean and standard deviation.

2. SWOT collection of information leadership for principal of high school in Guangxi

Part 3: Results of a content analysis of focus group discussion on information leadership for principal of high school in Guangxi.

Part 4: The analysis result about the evaluation of the suitability and feasibility of strategies for developing information leadership for Principal of High School in Guangxi. Presented the data in the form of mean value and standard deviation.

Results of Data Analysis

The researcher analyzed the data in the following 3 parts:

Part 1: Results of the analysis of respondents' personal information by gender, education level, age, professional background, region and type of school, Data were presented in the form of frequencies and percentages

Table 4.1 Personal information

(n = 159)

	Personal Information	Frequency	Percentage
Gender	male	123	77.36
	female	36	22.64
	Total	**271**	100.00
Age	31 to 40	29	18.24
	41 to 50	112	70.44
	51 years old or up	18	11.32
	Total	**159**	**100.00**
Education	College	6	3.77
	Bachelor's Degree	155	97.48
	Masters and above	6	3.77
	Total	**159**	**100.00**

Table 4.1 (Continue)

(n = 159)

Personal information		Frequency	Personal
Professional background	Arts	77	48.43
	Science	70	44.03
	Arts	4	2.52
	Physical Education	8	5.03
	Total	**159**	**100.00**
region	East	12	7.55
	South	43	27.04
	Central	35	22.01
	West	29	18.24
	North	40	25.16
	Total	**159**	**100.00**
Type of school	City	75	47.17
	County	79	49.69
	townships	5	3.14
	Total	**159**	**100.00**

According to Table 4.1, the distribution of respondents' schools shows that this survey includes 159 high school principals in Guangxi, 123 male respondents, accounting for 77.36%, and 36 female respondents, accounting for 22.64%. The age distribution of the respondents is as follows: 0 people under 30 years old, accounting for 0%, 29 people between 31-40 years old, accounting for 18.24%%, 112 people between 41-50 years old, accounting for 70.44%, and 18 people aged 51 years old and above, accounting for 11.32%. In terms of educational background, there are 6 people with a specialized degree or below, 3.77%, 112 people with a bachelor's degree, 70.44% of the respondents, and 6 people with a master's degree or above, 70.44%. The respondents' professional backgrounds are as follows: 77, or 48.43%, in arts; 70, or 44.03%, in science; 4, or 2.52%, in art; and 8, or 5.03%, in sports. In terms

of the region of Guangxi where the respondents' schools are located, there are 12 students in the eastern region of Guangxi, accounting for 7.55%, 43 students in the southern region, accounting for 27.04%, 35 students in the central region, accounting for 22.01%, 29 students in the western region, accounting for 18.24%, and 40 students in the northern region, accounting for 25.16%. The categorization of respondents' schools looks at 75 high schools in urban areas, accounting for 47.17%, 79 high schools in counties, accounting for 49.69%, and 5 high schools in townships, accounting for 3.14%.

Part 2: Analysis of the current situation of information leadership for principal of high school in Guangxi.

1. The questionnaire of information leadership for principal of high schools in Guangxi, that is analyzed in the form of mean and standard deviation. This section aims to investigate the current status of information leadership for principal of high school in Guangxi. To this end, this study uses a questionnaire to investigate the current status of information leadership for principal of high school in Guangxi in 5 aspects: vision, leader characteristics, environmental factors, team communication and cooperation, and data-driven decision support. Through the survey, the researcher gained a more in-depth understanding of the problems faced by Guangxi high school principals in terms of information leadership, which provided important data support for the further establishment of strategies to enhance information leadership. The questionnaire used in this study was specially designed by the researcher for this study, and the results of the survey are as follows:

Table 4.2 Mean and standard deviation of current situation of information leadership for principal of high school in Guangxi

(n = 159)

Information Leadership Factors for Principal of High School in Guangxi	$\bar{x}$	S.D.	level	order
1. Vision	3.94	.69	high	2
2. Leader Characteristics	3.63	.50	high	5
3. Environmental Factors	3.80	.64	high	4
4. Teamwork ability	3.99	.56	high	1
5. Data Driven Decision Support	3.86	.59	high	3
Total	**3.85**	**.60**	**high**	

According to the Table 4.2, found that Mean of information leadership for principal of high school in Guangxi, that is in the middle to upper range ($\bar{x}$ =3.85). Among the 5 aspects, the highest level is Teamwork ability ($\bar{x}$ = 3.99). Next is Vision ($\bar{x}$ = 3.94) and the lowest level is Leader Characteristics ($\bar{x}$ = 3.63).

Table 4.3 Mean and standard of current situation vision of information leadership principal of high school in Guangxi

(n = 159)

Vision	$\bar{x}$	S.D.	level	order
1 Principal has formulated a vision plan for the development of information technology in the long, medium and short term.	3.82	.83	high	11
2 Principal has developed an information technology management system	3.94	.89	high	5
3 Principal has a plan for the construction of information technology infrastructure.	3.92	.88	high	7

Table 4.3 (Continue)

(n = 159)

Vision	$\bar{x}$	S.D.	level	order
4 Principal has a plan for the use of information technology	3.94	.88	high	6
5 Principal explains the school's information technology vision plan to teachers and students on different occasions.	3.89	.85	high	8
6 Principal is able to complete the developed plan in an orderly manner.	4.09	.79	high	1
7 Principal will make adjustments to the information technology vision plan midway through the school year according to the actual situation	3.97	.77	high	3
8 Principal regularly describes the school's aspirational vision, goals, and direction.	4.08	.80	high	2
9 Principal establishes a specific division of labor among the management team for information technology goals.	3.88	.92	high	9
10 Principal understands the current status of the school's information technology development and evaluates the plan on a step-by-step basis.	3.83	.82	high	10
11 Principal plans for the security and confidentiality of the school network.	3.96	.79	high	4
Total	**3.94**	**.69**	**high**	

As shown in Table 4.3, current situation of vision of information leadership for principal of high school in Guangxi, That is in the middle to upper range ($\bar{x}$ = 3.94). Of the 11 questions, the highest score was "The principal can complete the plan in an orderly manner" ($\bar{x}$ = 4.09), followed by "The principal often describes the school's desirable vision, goals, and direction" ($\bar{x}$ = 4.08), and the lowest score was "The principal has developed a vision plan for the development of information technology in the long, medium, and short term" ($\bar{x}$ = 4.08). The lowest score was "The principal develops an informational vision for the school's development in the long, medium, and short term" ($\bar{x}$ = 3.82).

Table 4.4 Mean and standard of current situation of leader characteristics of information leadership for principal of high school in Guangxi

(n = 159)

	Leader Characteristics	$\bar{x}$	S.D.	level	order
1	Principal is able to make suggestions for the development of the teachers and allows them to utilize their strengths.	4.14	.82	high	5
2	Principal listens patiently to teachers' questions and answers them.	4.37	.70	high	2
3	Principal is not a person who worries easily and has many friends.	4.09	.77	high	7
4	Principal is open-minded and has a strong sense of innovation.	4.21	.72	high	4
5	Principal loves his/her job and has a strong sense of commitment and enterprise.	4.51	.59	high	1
6	Principal likes to explore and discover the unknown.	4.13	.80	high	6
7	Principal is constantly learning to enrich and improve his/her abilities.	4.27	.82	high	3
8	Principal feels that he or she is better than most people.	3.09	1.03	medium	10
9	Principals sometimes use threats or flattery to persuade people to do what you want them to do.	2.62	1.31	medium	11
10	Principal is under so much pressure that you sometimes feel as if you are going to collapse.	3.14	1.07	medium	9
11	Principal often feels energized and full of energy.	3.68	.93	high	8

Table 4.4 (Continue)

(n = 159)

Leader Characteristics	$\bar{x}$	S.D.	level	order
12 Principal can be somewhat self-centered and not very considerate of others' feelings.	2.42	1.07	low	13
13 When things are not going well for the principal, you may feel discouraged and want to give up.	2.53	1.08	medium	12
Total	**3.63**	**.50**	**high**	

According to Table 4.4, current situation of leader characteristics of information leadership for principal of high school in Guangxi, That is in the middle to upper range ($\bar{x}$ = 3.63). Among the 13 questions, the highest score is "the principal loves his/her job and has a strong sense of enterprise and drive" ($\bar{x}$ = 4.51), followed by "the principal listens patiently to teachers' questions and answers them" ($\bar{x}$ = 4.37), and the lowest score is "the principal listens patiently to teachers' questions and answers them" ($\bar{x}$ = 4.37), while the lowest score is "the principal is a good teacher" ($\bar{x}$ = 4.37). 4.37), and the lowest score was "The principal can be somewhat self-centered and not very considerate of other people's feelings" ($\bar{x}$ = 2.42).

Table 4.5 Mean and Standard of current situation of information leadership for principal of high school in Guangxi in environmental factors

(n = 159)

	Environmental factors	$\bar{x}$	S.D.	level	order
1	Principal's school carries out the construction of informatized teaching resources.	3.80	.78	high	8
2	Principal establishes an incentive mechanism for teachers to implement informatized classroom teaching.	3.69	.83	high	13
3	Principal's school adopts information management methods for personnel, finance, and asset management.	3.81	.78	high	7
4	Principal's school has enough information technology equipment and network speed to meet the teaching and learning of teachers and students.	3.72	.87	high	11
5	Principal School teachers are proficient in using information technology for teaching and research.	3.84	.83	high	5
6	Purification, beautification, and civilization of the principal's campus environment are extremely high.	3.94	.77	high	1
7	Teachers of the Principal's School actively participate in information technology training and take the initiative to learn new technologies.	3.91	.80	high	2
8	Teachers and students of the Principal's School are proficient in using information technology communication tools.	3.91	.79	high	2
9	Principal's school builds a new information technology learning environment and promotes students' use of technology to support learning.	3.74	.85	high	10

Table 4.5 (Continue)

(n= 159)

Environmental factors	$\bar{x}$	S.D.	level	order
10 Principal's School utilizes the campus network to promote	3.83	.80	high	6
11 Principal's School utilizes the campus network for teaching and learning management.	3.87	.83	high	4
12 Principal's School utilizes the campus network to share teaching resources.	3.80	.86	high	9
13 Principal's school has established a reward system for teachers' information teaching.	3.71	.86	high	12
14 Principals often participate in information-related training	3.64	.85	high	14
Total	**3.80**	**.64**	**high**	

As can be seen from Table 4.5, current situation of Environmental factors of information leadership for principal of high school in Guangxi, that is in the upper-middle level ($\bar{x}$ = 3.80). Among the 14 questions, the highest score is "the principal's campus environment is highly purified, beautified, and civilized" ($\bar{x}$ = 3.94), followed by "principals' school teachers actively participate in information training" ($\bar{x}$ = 3.91), and the lowest score is "principals often participate in information-related training" ($\bar{x}$ = 3.64). "Teachers at the principal's school actively participate in information technology training and take the initiative to learn new technologies" ($\bar{x}$= 3.91), and the lowest score was "The principal often participates in information technology-related training" ($\bar{x}$ = 3.64).

Table 4.6 Mean and standard of current situation of information leadership for principal of high school in Guangxi in Teamwork ability

(n=159)

	Teamwork ability	$\bar{x}$	S.D.	level	order
1	Principal will encourage teachers to speak up and think differently from others.	4.15	.72	high	3
2	Principal's school uses the campus network to summarize and reflect on the feedback.	3.28	1.14	medium	12
3	principal often communicates and discusses with teachers about their work.	4.18	.67	high	2
4	Principal often coordinates work and conflicts between school departments/staff.	4.03	.76	high	7
5	Principal implements the concept of people-oriented management everywhere.	4.19	.65	high	1
6	Principal cooperates with parents, the community, and other stakeholders outside the school.	3.98	.82	high	8
7	Principal's school has a platform for teachers to participate equally and learn from each other.	3.96	.80	high	10
8	Principal communicates regularly with students to meet their learning needs.	4.13	.72	high	5
9	Principal can clearly express the need to communicate and exchange information	4.04	.79	high	6
10	Principal believes that information technology tools have a positive effect on teamwork and communication.	4.14	.71	high	4
11	Principal's management team discusses controversial issues together.	3.86	.74	high	11
12	Principal's school teachers voluntarily share insights and experiences with each other.	3.97	.72	high	9
	Total	**3.99**	**.56**	**high**	

As can be seen from Table 4.6, current situation of Teamwork ability of information leadership for principal of high school in Guangxi, That is in the middle to upper range ($\bar{x}$ = 3.99). Among the 12 questions, the highest score is "Principals implement the concept of people-oriented management in every aspect." ($\bar{x}$ = 4.19), followed by "The principal frequently communicates and discusses workplace issues with teachers." ($\bar{x}$ = 4.18), and the lowest score was "The principal's school uses the campus website to summarize and reflect on feedback." ($\bar{x}$ = 3.28).

Table 4.7 Mean and standard of current situation information leadership for principal of high school in Guangxi in data-driven decision support

(n=159)

	Data Driven Decision Support	$\bar{x}$	S.D.	level	order
1	Principal makes decisions on a number of matters based on the analysis of data collected by the school.	3.97	.76	high	2
2	Principal relies on data analysis in the decision-making process.	3.80	.84	high	9
3	Principal analyzes the statistics of the school's information technology teaching and learning.	3.84	.82	high	7
4	Principals analyze the school's digital resource construction program based on data.	3.67	.73	high	12
5	Principal analyzes and evaluates the use of the school's financial resources.	3.96	.69	high	4
6	Principal will use relevant data as reference when evaluating school development.	3.83	.77	high	8
7	Principal believes that data decision-making will achieve the expected results.	3.97	.70	high	2
8	Principal encourages the school to build a data culture system or approach.	3.73	.85	high	10

Table 4.7 (Continue)

(n=159)

Data Driven Decision Support	$\bar{x}$	S.D.	level	order
9 Principal believes that data-driven decision-making is more scientific than subjective decision-making.	3.88	.80	high	6
10 Principal uses data tools to evaluate teacher performance	3.96	.77	high	4
11 Principal uses data tools to assess individual student development.	4.28	.72	high	1
12 Principal is convinced that data-driven decision-making enhances school	3.70	.80	high	11
13 Principal has a high awareness of data security.	3.61	.81	high	13
Total	**3.85**	**.60**	**high**	

As can be seen from Table 4.7, current situation of data-driven decision support of information leadership for principal of high school in Guangxi, That is in the middle to upper range ($\bar{x}$ = 3.86).Among the 13 questions, the highest score is "Principals use data tools to assess students' personal development" ($\bar{x}$ = 4.23), followed by "Principals believe that data decision making will achieve the expected results and principals make decisions on some matters based on data analysis collected in schools" ($\bar{x}$ = 3.97), and the lowest score is "Principals have a high awareness of data security. believes that data decisions will have the desired effect and that the principal makes decisions on some matters based on the analysis of data collected at the school" ($\bar{x}$ = 3.97), and the lowest score was "The principal has a high level of awareness of data security." ($\bar{x}$ = 3.61).

2. SWOT collection of information leadership for principal of high school in Guangxi

Table 4.8 SWOT collection and organization

Strengths	Weaknesses
1. Principal is enthusiastic about theirs position, has a strong sense of commitment, and is committed to improving the education information technology infrastructure and rationalizing the use of digital teaching resources in order to enhance student development. 2. Principal is self-confident and committed to promoting IT in school education. 3. the policy supports the information of education in schools, which is easy to implement, practicable and timely. 4. a paperless office policy is implemented to modernize education management.	1. Insufficient funds, poor management and lack of professional and technical staff are the main problems faced by schools. 2. Lack of long-term planning, insufficient understanding of the current situation by principals as well as insufficient willpower of principals are the key factors affecting the development of information in schools. 3. Insufficient utilization of information and lack of unified scientific standardization of digital resources lead to confusion in the management of teaching resources. 4. the uneven level of application of information technology by managers, which needs to be upgraded as a whole. 5. teachers' awareness and ability to utilize IT to assist lessons need to be further enhanced and support for new technologies increased. 6. teachers' participation in training on the integration of IT technology with the curriculum is low, and training and learning in this area need to be strengthened. 7. schools lack a set of unified resource management methods for teaching and learning, and need to establish a set of scientific management system. 8. schools have not invested enough in the construction of educational digital resource libraries, and there is a need to increase investment in the construction of resource libraries.

Table 4.8 (Continue)

Opportunities	Threats
1.National policy support: The state has given strong support to education information, providing a macro policy orientation for the information leadership of Guangxi high school principals. 2.Sufficient resources: Teachers' individual learning resources are sufficient, providing a foundation for principals to lead their teaching teams. 3.Individualized student needs: As students' individualized learning needs grow, principals need to pay atention to and use information technology to meet these needs. 4.Training and practice: Principals need to actively participate in information training, learn new knowledge, and make information teaching and management a regular practice. 5.Smart Campus and Smart Education Teaching System: With the popularity of smart campus and smart education teaching system, they are becoming more and more cost-effective and provide technical support for principals' information leadership. 6.Atention of Guangxi Education Department: Guangxi Education Department's Information Center	1.Adequate funding and students' personalized development: Schools with adequate funding are more conducive to students' personalized development, which requires principals to make wise decisions on funding allocation. 2.Competition and understanding: Competition in the field of education information is fierce, and the community does not yet have a deep understanding of education information, which requires principals to exercise leadership to provide proper guidance and advocacy. 3.Challenges in backward areas: In backward areas, training on information leadership may be insufficient, and principals need to find and utilize limited resources for training and upgrading. 4.Data security issues: Principals need to pay more atention to data security protection to ensure the safety of school information assets. 5.Teacher pressure and subject integration: Subject teachers are under pressure to advance to higher education, resulting in them devoting a lot of time to examination subjects and lack of atention to the cultivation and continuous development of IT skills in education. Teachers of various disciplines have different understanding of IT, leading to unstable integration of IT with disciplines. Principals need to guide teachers to have a correct understanding of education information to promote the stability of integration.

Table 4.8 (Continue)

Opportunities	Threats
attaches importance to the training of teachers' information teaching ability, reflecting the high importance the local government attaches to education information. 7.Platform construction: The state has built the "National Wisdom Platform", and Guangxi also has a wisdom platform for information teaching such as "Bagui Teaching Pass", which provides rich resources and platform support for teachers and students. 8.Teachers' role: The state encourages teachers to provide a stable platform and rich resources for students' independent, inquiry and cooperative learning, which requires principals to guide teachers to better play this role, and to promote students' personalized learning and the generation of active learning ability.	6.Challenge of full-scale development of education information: The full-scale development of education information in schools puts higher demands on the quality of managers and teachers. Principals need to actively address this challenge, reduce the burden on teachers, and promote the smooth implementation of education information in schools.

From the above questionnaire SWOT data, simply and simply organize the following:

1. strengths

1) Principal is enthusiastic about their position, has a strong sense of commitment, and is committed to improving the education information technology infrastructure and rationalizing the use of digital teaching resources in order to enhance student development.

2) the principal is self-confident and committed to promoting IT in school education.

3) the policy supports the infoumation of education in schools, which is easy to implement, practicable and timely.

4) a paperless office policy is implemented to modernize education management.

2. Weaknesses

1) Insufficient capital investment in increasing education information

2) Low level of information to improve management personnel

3) No incentive mechanism for information of education

4) Lack of long-term planning, insufficient understanding of the current situation by principals, and weak willpower of principals.

5) Insufficient utilization of information technology, lack of unified scientific standardization of digital resources, leading to confusion in the management of teaching resources.

6) Teachers' and students' application level of information technology varies and needs to be upgraded as a whole.

7) The integration of school management and information technology needs to be improved for more efficient management.

8) Teachers' awareness and ability to utilize information technology to assist lessons need to be further enhanced and support for new technologies increased.

9) Teachers' participation in training on the integration of information technology with the curriculum is low, and training and learning in this area need to be strengthened.

10) Schools lack a set of unified approach to teaching resource management and need to establish a set of scientific management system.

11) Schools have not invested enough in the construction of educational digital resource libraries, and need to increase investment in the construction of resource libraries.

3. Opportunites

1)The state provides sufficient learning resources for teachers to enhance their motivation to participate in training.

2) Informatized teaching and management have become a norm, and the cost-effectiveness of smart campuses and smart education teaching systems is getting higher and higher.

3) The Information Center of Guangxi Education Department attaches importance to the training of teachers' information teaching ability and provides teachers with good learning conditions.

4) The state has built the "National Wisdom Platform", and Guangxi has also established the "Bagui Teaching Tong" information teaching wisdom platform, which provides teachers with rich resources and platform support.

5) The state encourages teachers to provide stable platforms and rich resources for students' independent, inquiry and cooperative learning, so as to promote students' personalized learning and the generation of active learning ability.

4. Threats

1) Inadequate funding is an obvious obstacle to the development of modernized education in schools.

2) Insufficient information technology leadership training for school principals and insufficient atention to data security protection.

3) The attrition of education information infrastructure requires continuous investment of funds.

4) Subject teachers are under pressure to advance to higher education and lack atention to the cultivation and continuous development of their own educational information capacity.

5) Teachers of various disciplines have different perceptions of information technology, leading to unstable integration of information technology and disciplines.

6) The full-scale development of education information in schools puts higher demands on the literacy of administrators, teachers and students, increasing the burden.

Now according to the questionnaire each dimension of the highest score of 2 items and SWOT content analysis to form a preliminary strategy outline as follows:

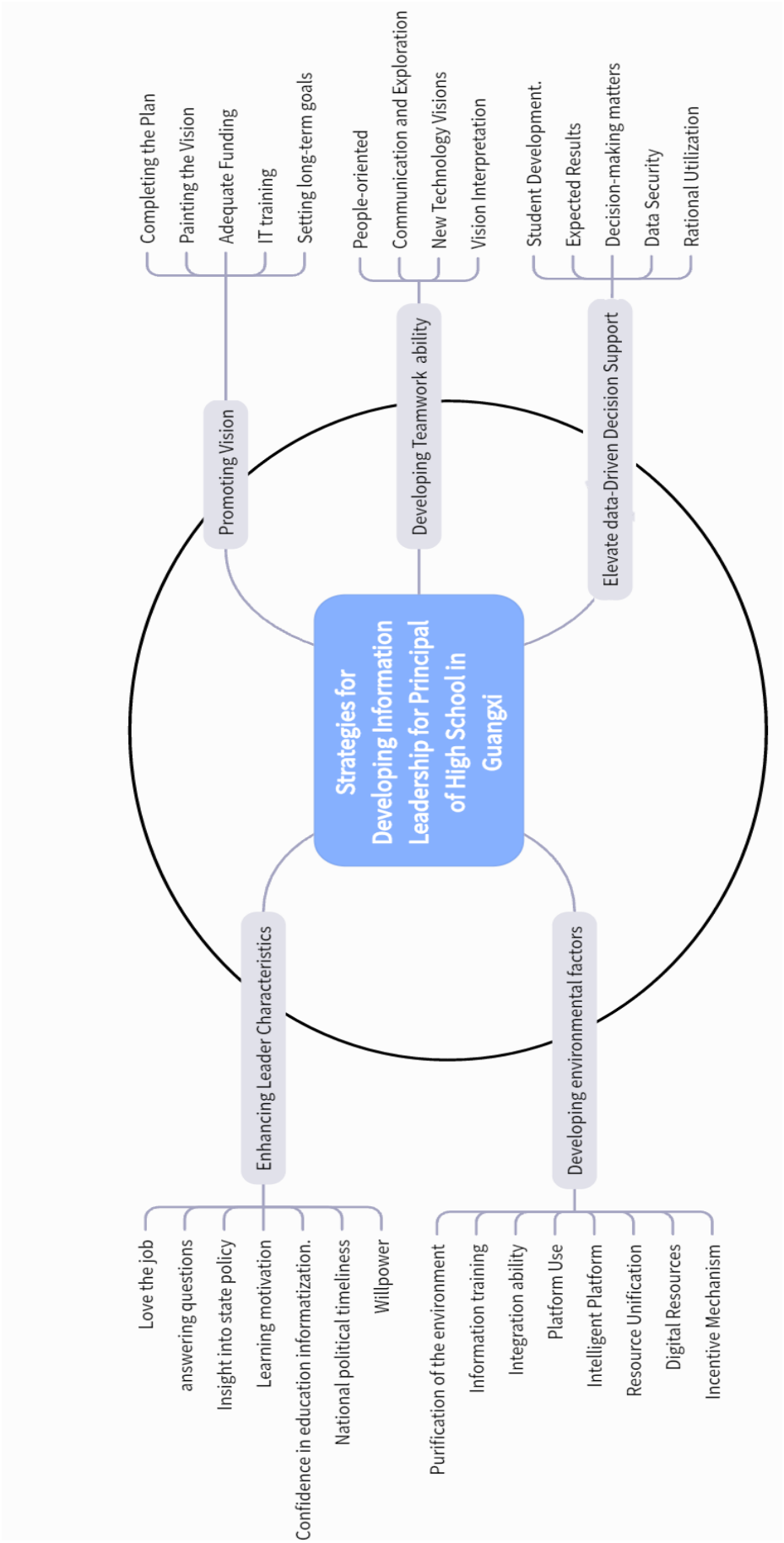

Figure 4.1 Outline of Strategies for Developing Information Leadership for principal of high School in Guangxi

Table 4.9 Outline of Strategies for Developing Information Leadership for principal of high School in Guangxi

Strategy	How to
Promoting Vision	1) Promoting Principal is able to accomplish the plans set out in an orderly manner. 2) Promoting Principal will often describe the school's aspirational vision, goals and direction. 3) Develop a plan with adequate funding for educational information technology 4) Increase training in information technology for administrators, teachers, and students 5) Promoting Principal sets long-term goals for the modernization of education.
Enhancing Leader Characteristics	1) Enhancement of the principal's dedication to his/her job 2) Enhancing Principal's ability to listen patiently to teachers asking questions and answering their queries 3) Enhancing Principal enhances the administrator's insight into national policies 4) Enhancing Principal enhances teachers' active participation in learning IT positively 5) Enhancing Principal enhances the principal's confidence in education information technology 6) Enhancing Principal enhances the timeliness of the principal to formulate the national political fall 7) Enhancement of principals' willpower
Developing Environmental Factors	1) Developing Principal campus environment of purification, beautification, civilization is extremely high. 2) Developing Principal school teachers actively participate in information technology training and take the initiative to learn new technologies.

Table 4.9 (Continue)

	3) Enhance the ability of teachers of all subjects to integrate information technology and subjects 4) Increase the training of principals on the use of national and Guangxi wisdom platforms 5) Constructing a platform for smart campus and smart education system 6)Strengthen the unified management of digital resources 7) Enhancing teachers' ability to use digital education resources rationally 8) Developing incentive mechanisms for education information
Developing Teamwork ability	1) Enhance the principal's implementation of the people-oriented management concept. 2) Promote principals' frequent communication and discussion with teachers about problems in their work. 3) Increase the communication between principals and teachers to exchange visions of new technologies 4) Increase communication between the principal and teachers and students about the school's vision.
Elevate Data Driven Decision Support	1)Elevate Principals use data tools to assess individual student development. 2) Elevate Principal believes that data decisions will have the desired effect. 3) Elevate Principal makes decisions based on the analysis of data collected at the school. 4) Improve the principal's data safety training 5) Elevate Data tools are utilized appropriately based on the school's goal achievement

Part 3: Results of the content analysis of the information leadership interviews with high school principals in Guangxi.

This section aims to enhance the strategy of information leadership of Guangxi high school principals. In order to achieve this goal, this study used a focus discussion group to form a group of 14 people to make modifications and revisions and additions based on the current status and outline of Guangxi high school principals' information leadership provided above. The formation of the focus discussion group consisted of 14 principals from Guangxi high schools. Through the discussion, a preliminary research on strategies to enhance the information leadership of Guangxi's high school principals was formed, which provided important data support for us to further determine the enhancement strategies.

Table 4.10 Information of focus group discussants

Expert	Information	Date, time	Work experience (year)
expert 1	Education: Bachelor's degree Specialization: Educational administration Work experience:20 years	February 4, 2024, 10:00 am GMT +8	13
Expert 2	Education: Bachelor's degree Specialization: Educational administration Work experience:30 years	February 4, 2024, 10:00 am GMT +8	15
Expert 3	Education: Bachelor's degree Specialization: Educational administration Work experience:22 years	February 4, 2024, 10:00 am GMT +8	8

Table 4.10 (Continue)

Expert	Information	Date, time	Work experience (year)
Expert 4	Education: Bachelor's degree Specialization: Educational administration Work experience:16 years	February 4, 2024, 10:00 am GMT +8	7
Expert 5	Education: Bachelor's degree Specialization: Educational administration Work experience:19 years	February 4, 2024, 10:00 am GMT +8	7
Expert 6	Education: Bachelor's degree Specialization: Educational administration Work experience:25 years	February 4, 2024, 10:00 am GMT +8	8
Expert 7	Education: Bachelor's degree Specialization: Educational administration Work experience:34 years	February 4, 2024, 10:00 am GMT +8	17
Expert 8	Education: Bachelor's degree Specialization: Educational administration Work experience:23 years	February 4, 2024, 10:00 am GMT +8	7
Expert 9	Education: Bachelor's degree Specialization: Educational administration Work experience:26 years	February 4, 2024, 10:00 am GMT +8	11
Expert 10	Education: Bachelor's degree Specialization: Educational administration Work experience:24years	February 4, 2024, 10:00 am GMT +8	15
Expert 11	Education: Bachelor's degree Specialization: Educational administration Work experience:18years	February 4, 2024, 10:00 am GMT +8	5

Table 4.10 (Continue)

Expert	Information	Date, time	Work experience (year)
Expert 12	Education: Bachelor's degree Specialization: Educational administration Work experience:24 years	February 4, 2024, 10:00 am GMT +8	8
Expert 13	Education: Bachelor's degree Specialization: Educational administration Work experience:22 years	February 4, 2024, 10:00 am GMT +8	5
Expert 14	Education: Bachelor's degree Specialization: Educational administration Work experience:30 years	February 4, 2024, 10:00 am GMT +8	8

The focus discussion group lasted a total of 40 minutes and each person completed 2 pages of information, resulting in a total of 28 pages of transcripts. Table 4.10 describes the descriptive details of the interview data, including basic information about the members of the focus discussion group, date and time. The group conducted 1 centralized focus discussion using the tencent meeting application, and then asked them to continue to revise and add to the provided Outline of the Current Status of Infoumation Leadership of Guangxi High School Principals. The following are the revisions and suggestions made by the 14 focus group members to the outline, which was ultimately refined and summarized to produce the developmental strategies shown in the table below.

Table 4.11 Strategies for developing Information Leadership for Principal of High School in Guangxi

Strategies	How to
Promoting Vision	1. Promote the ability of principals to efficiently implement school work plans. By formulating clear and comprehensive work plans, we ensure that all school affairs are carried out in an orderly manner, while emphasizing the effectiveness and sustainability of our work. 2. Promote the principal's ability to outline the school's vision, set goals, and clarify the direction of progress. Vision is the long-term goal of the school, and the goal of striving is the short-term roadmap to achieve this vision. The principal needs to be able to clearly depict the future of the school and point out the direction for teachers and students to work together. 3. Sustainable development of a reasonable funding budget for educational information. Funds are an important guarantee for promoting the process of educational information. The principal needs to ensure sufficient funding investment, and at the same time, allocate it reasonably to avoid waste, and adjust the budget in a timely manner according to the actual situation of the school. 4. Promote the abilities of all teachers and students in information technology. This includes providing systematic information technology training for managers, teachers, and students, enabling them to fully utilize information technology to improve teaching quality, enhance learning outcomes, and optimize school management processes. 5. Sustainable development and optimization of medium - and long-term goals for educational information. The goal should not only be forward-looking, but also practical and actionable. With the development of the school and changes in the external environment, principals need to regularly review and adjust these goals to ensure they are always consistent with the overall strategy of the school.

Table 4.11 (Continue)

Strategies	How to
Enhancing Leader Characteristics	1. Promote principals to demonstrate a high level of professional ethics and dedication, and fully devote themselves to the management and development of the school. 2. Enhance the principal's understanding of school culture and create a positive and upward working atmosphere. 3. Promote the principal to establish effective communication channels, actively listen to the opinions and suggestions of teachers, and provide them with timely and accurate answers. 4. Development Principal actively encourages teachers to propose innovative viewpoints and suggestions, and stimulates the wisdom of the team. 5. Promote principals to actively guide and motivate teachers to actively learn new technologies, cultivate their technical literacy and innovation ability. 6. Promote principals to provide technical training and learning resources for teachers, and promote their professional development. 7. Development Principal firmly believes in the role of educational information in promoting the development of the school, and actively faces challenges and difficulties. 8. Enhance the principal's sense of identification and confidence in the information of team education. 9. Sustainability ensures the timely and accurate implementation of national policies by principals, and improves the timeliness of school work. 10. Develop effective implementation mechanisms for principals to ensure the smooth implementation of policies at the school level.

Table 4.11 (Continue)

Strategies	How to
	11. Development Principal should demonstrate firm determination and strong willpower to overcome difficulties and obstacles, In the process of promoting educational information. 12. Enhance the principal's management team to remain calm and firm in the face of challenges, and work together to tackle difficulties.
Developing Environmental Factors	1. Sustainable principals create a good campus environment. Principals need to pay atention to the purification, beautification and civilization of the campus environment to create a positive, healthy and harmonious campus atmosphere and provide good conditions for teachers and students to learn and work. 2. to facilitate principals to motivate and guide teachers to actively participate in new technology training, to cultivate the spirit of active learning and exploration, and to enhance the technology level of the teaching force. 3. to enhance teachers' ability to integrate information technology with their subjects. Teachers of all subjects should have the ability to effectively integrate information technology with subject teaching and be able to use information technology means to improve the quality and effectiveness of teaching. 4. promote principals' in-depth understanding of the role of the national and Guangxi wisdom platforms. Principals need to increase their interpretation of relevant policy documents and clarify the important position and role of the wisdom platform in education information so as to better guide the school's education information work.

Table 4.11 (Continue)

Strategies	How to
	5. develop the principal's construction of the smart campus and smart education system platform. Principals need to comprehensively plan and implement the construction of smart campuses in their schools, establish a perfect education information platform, and provide rich digital education resources and services. 6. Promote principals' unified management of school digital resources. Principals need to establish a sound digital resource management system to ensure the rational use and effective management of digital resources and avoid waste and abuse of resources. 7. Enhance teachers' ability to use digital education resources appropriately. Principals need to strengthen training and guidance for teachers' ability to use digital educational resources to ensure that teachers can use digital educational resources reasonably and effectively to improve teaching and learning effects. 8. Incentive mechanism for promoting education information. Principals need to develop corresponding incentive mechanisms to encourage teachers and students to actively participate in education information, stimulate their innovative spirit and creativity, and promote the in-depth development of education information in schools.
Developing Teamwork ability	1. Develop Principal reinforces the idea of "people-oriented management", genuinely cares about the development and needs of teachers and students, and creates a harmonious and beneficial working and learning environment for them. 2. Develop principals to encourage a culture of open communication, listen to different opinions, and stimulate the

Table 4.11 (Continue)

Strategies	How to
	team's spirit of innovation. 3. promote principals engage in regular open and frank dialogues with teachers to discuss and resolve challenges and problems at work, and to encourage teachers to share their experiences and innovative ideas. 4. promote principals effective feedback mechanisms among to ensure a two-way flow of information. 5. Develop principals to actively seek opportunities for collaboration with various types of external organizations, including enterprises, universities and research institutes, etc., in order to gain access to more resources, technologies and ideas. 6. promote principals to expand the scope of cooperation, which is not only limited to resource sharing, but also project cooperation, research cooperation, etc., so as to promote the common progress of the school and the society. 7. promote principals gain a deeper understanding of the ideals and aspirations of teachers and students, and to integrate them with the school's development plan, so as to form a common vision and goal. 8. develop principals to encourage teachers and students to participate in school decision-making and to ensure that their voices are heard and included in the decision-making process.
Elevate Data Driven Decision Support	1. Improve principals' ability to use data tools to assess students' personal development. Principals need to master the use of data tools to analyze individual students' progress and needs in terms of academics, skills, and interests in order to provide more personalized educational support to students. 2. Improve principals' confidence that data decisions achieve

Table 4.11 (Continue)

Strategies	How to
	desired results. Principals should make decisions based on data and analytics, and have confidence that data-driven decisions lead to positive results, while making adjustments and optimizations based on actual results. 3. Improve principals' ability to use data collection and analysis to make decisions on certain matters. Principals should have the ability to collect, organize and analyze data, and use data to provide a basis for decision-making and to improve the scientificity and accuracy of decisions. 4. Improve principals' awareness of data security. Principals need to pay atention to data security and privacy protection, ensure the compliant use and storage of data, and avoid data leakage and misuse. 5. Improve principals' support mechanisms for data-driven decision-making. Principals need to establish a comprehensive data collection, analysis and reporting system to ensure the accuracy and timeliness of data and provide strong support for decision-making. 6. Improve the data literacy of the principal's management team. Principals should develop their team's data awareness and analytical skills so that team members can understand and apply data-driven decision-making methods. 7. Improve principal's continuous optimization of the data-driven decision-making process. The principal should continuously optimize the decision-making process based on data analysis and actual results, and continuously improve the mechanism and methods of data-driven decision-making.

Based on the statistical collation in Table 4.11, the researcher gives the leadership strategies to enhance the information technology leaders of Guangxi high school principals are embodied in 5 directions, which mainly contain 40 strategies. 5 articles of vision, 12 articles of leader characteristics, 8 articles of environmental factors, 8 articles of teamwork ability, and 7 articles of data-driven decision support, as shown in Figure 4.1.

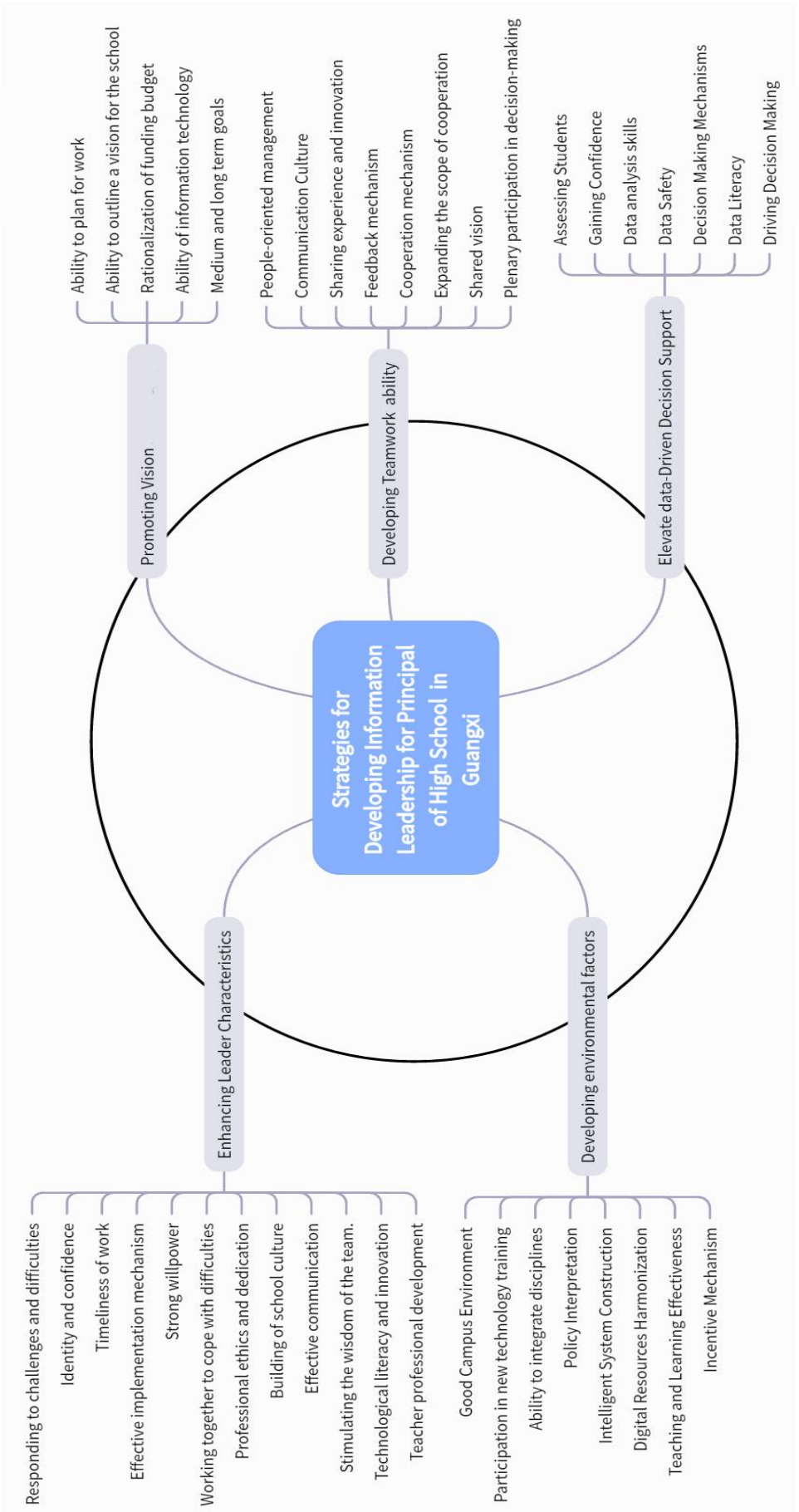

Figure 4.2 Strategy for developing information leadership for principals of high school in Guangxi

Strategy for developing information leadership for principal of high school in Guangxi, that is now shown in dimensions as follows:

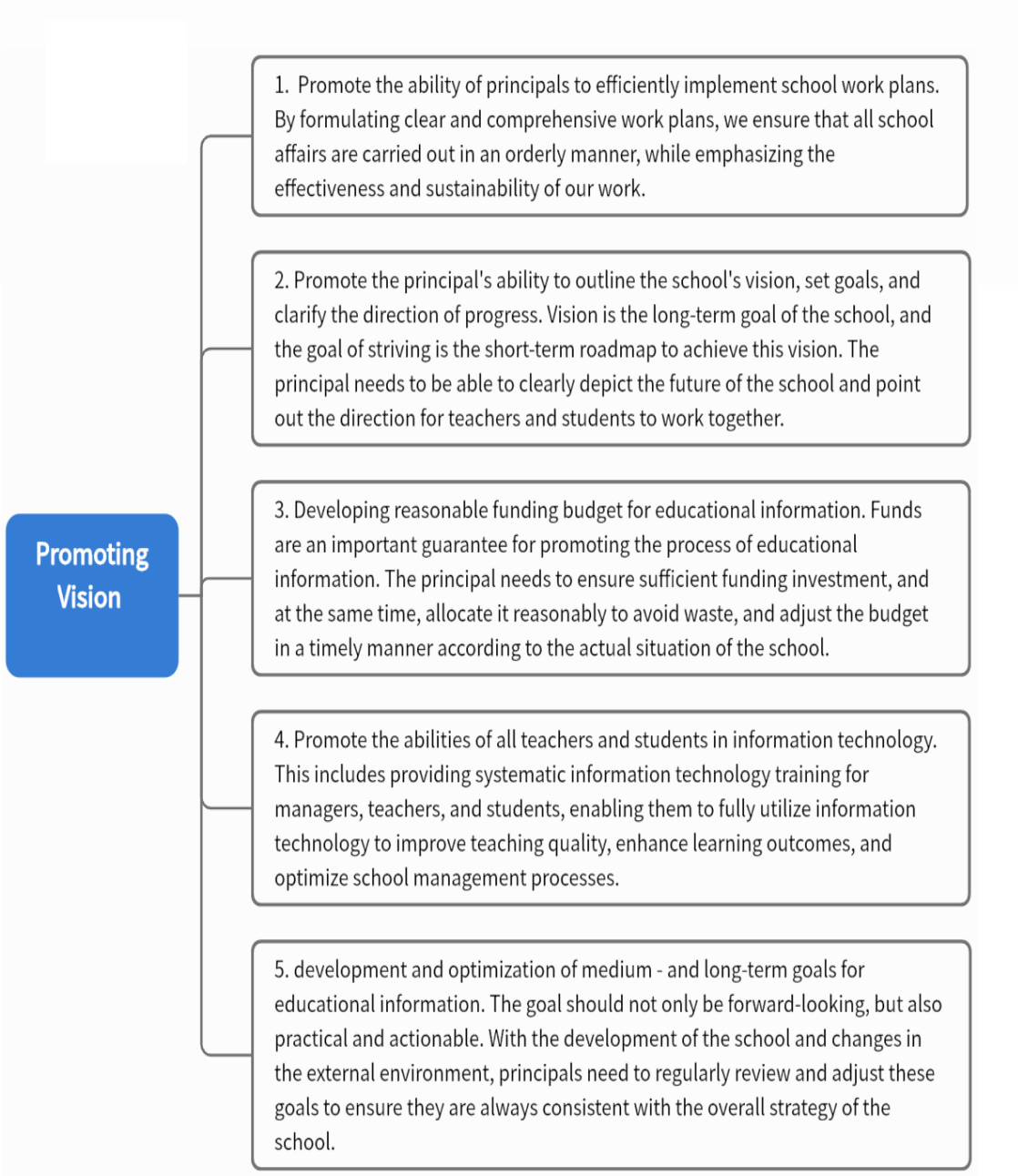

Figure 4.3 Strategies for promoting Vision and Strategy

Figure 4.4 Strategies for enhancing leader characteristics

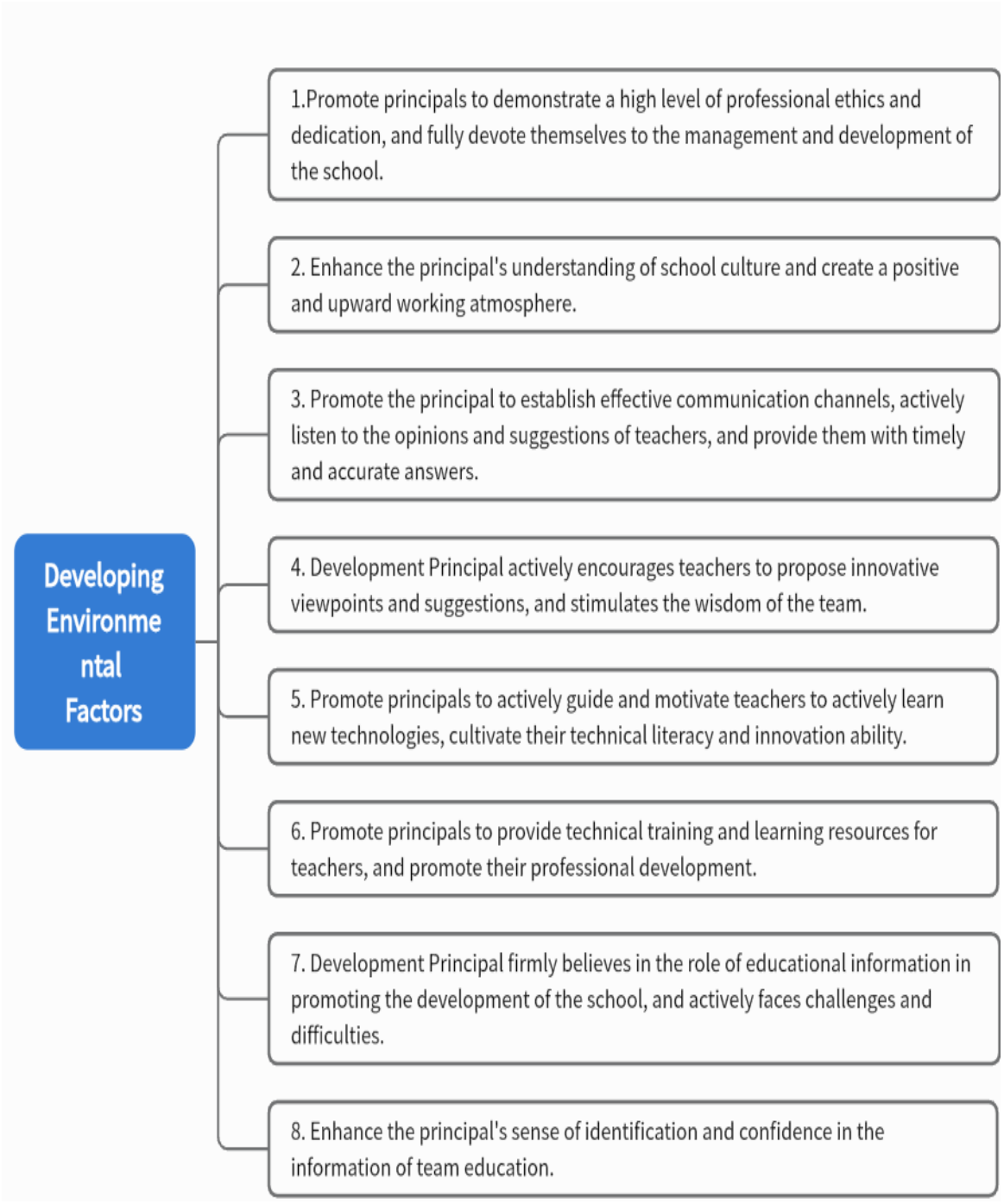

Figure 4.5 Strategies for developing environmental factors

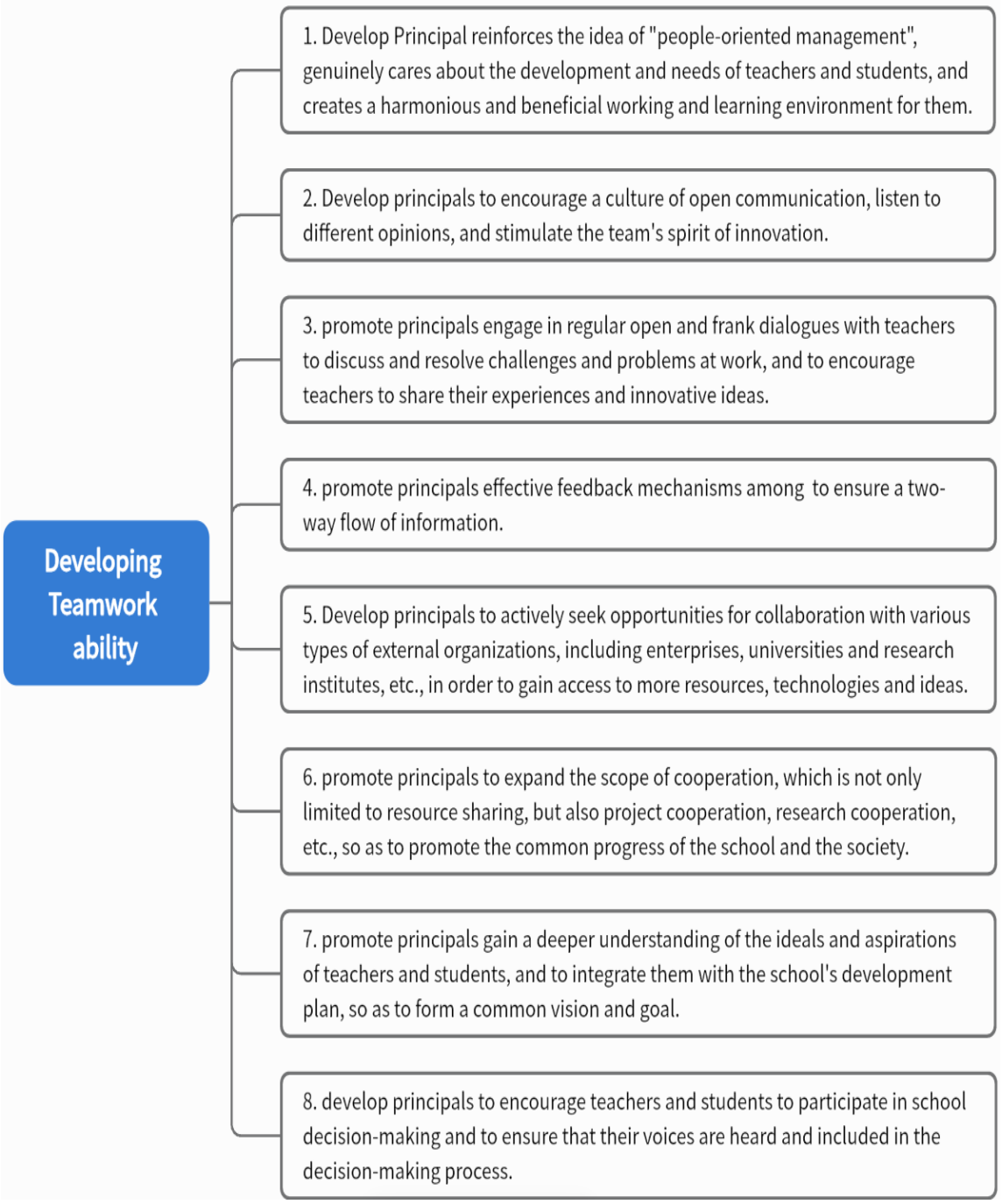

Figure 4.6 Strategies for developing Teamwork ability

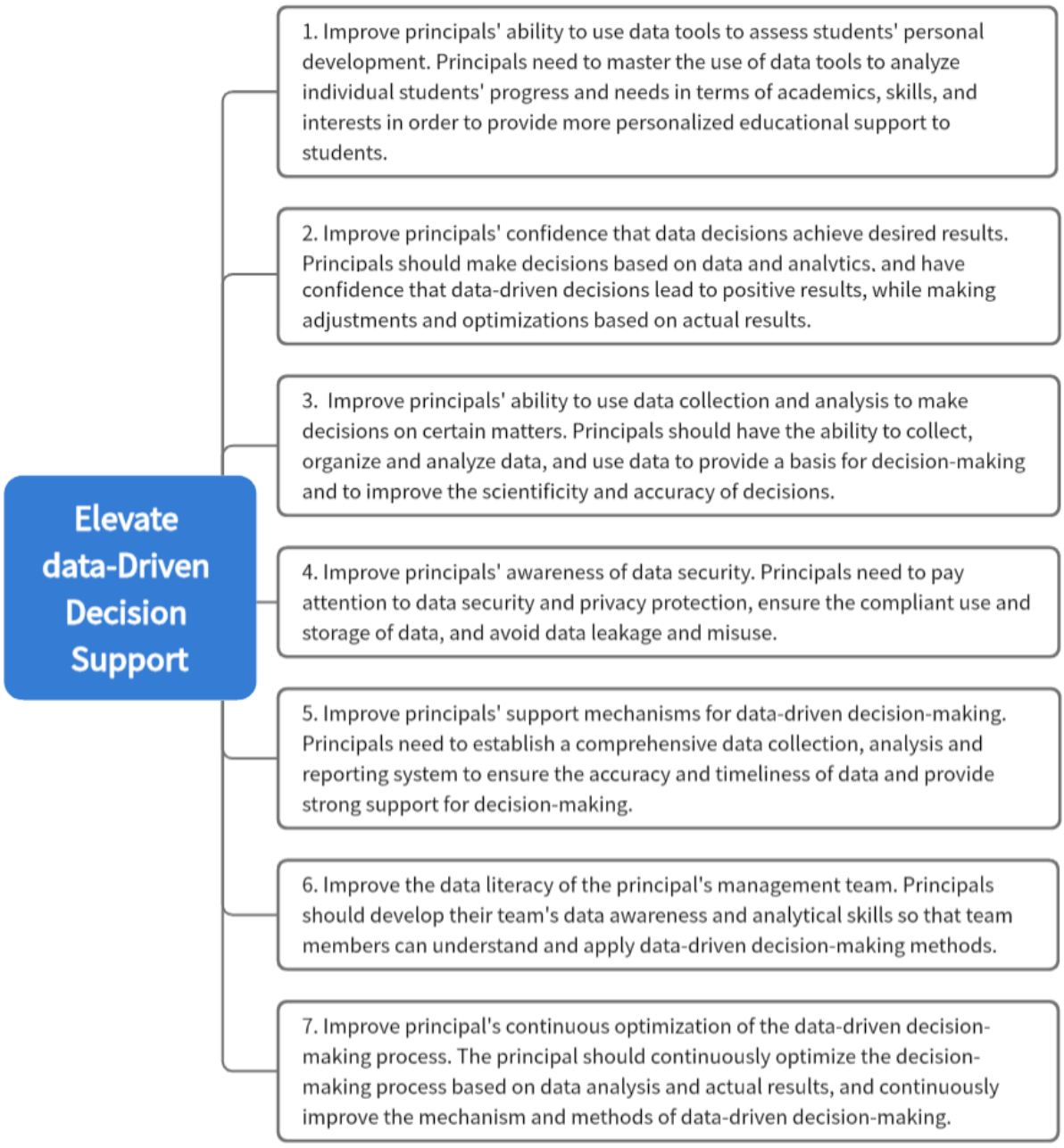

Figure 4.7 Strategy for elevate data-driven decision support

Part 4: The analysis result about the evaluation of the suitability and feasibility of strategies for developing information leadership for Principal of High School in Guangxi. Presented the data in the form of mean value and standard deviation.

Mean and standard deviations are presented in tabular form. suitability and feasibility testing of principal informational leadership in 5 aspects of strategies: vision, leader characteristics, environmental factors, teamwork ability, and data-driven decision support.

Table 4.12 Mean and standard deviation of the suitability and feasibility of strategies for improving the information leadership for Principal of High School in Guangxi

(N =11)

Strategies for developing information leadership for principal	suitability			feasibility		
	$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
1. Promoting Vision	4.17	.72	high	3.76	.95	high
2. Enhancing Leader Characteristics	3.55	1.04	high	4.15	.92	high
3. Developing Environmental Factors	4.10	.73	high	3.70	1.05	high
4. Developing Teamwork ability	3.72	.89	high	3.68	1.11	high
5. Elevate Data Driven Decision Support	4.06	.76	high	3.66	.99	high
Total	**3.92**	**.83**	**high**	**3.79**	**1.00**	**high**

According to Table 4.12, Vision has 5 enhancement strategies for suitablity and feasibility, with the highest suitability figure being "Vision" ($\bar{x}$ = 4.17), followed by "Data Driven Decision Support" ($\bar{x}$ = 4.06), and the lowest figure being Leader Characteristics ($\bar{x}$ = 3.55). Support" ($\bar{x}$ = 4.06), and the lowest was "Leader Characteristics" ($\bar{x}$ = 3.55). X = 4.15), followed by "Vision" ($\bar{x}$ = 3.76), and the lowest data was for Data Driven Decision Support ($\bar{x}$ = 3.68).

Table 4.13 Mean and standard deviation of the suitability and feasibility of strategies for developing information leadership for Principal of High School in Guangxi

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\overline{x}$	S.D.	level	$\overline{x}$	S.D.	level
Promoting Vision							
1	Promote the ability of principals to efficiently implement school work plans. By formulating clear and comprehensive work plans, we ensure that all school affairs are carried out in an orderly manner, while emphasizing the effectiveness and sustainability of our work.	3.82	.87	high	3.64	.92	high
2	Promote the principal's ability to outline the school's vision, set goals, and clarify the direction of progress. Vision is the long-term goal of the school, and the goal of striving is the short-term roadmap to achieve this vision. The principal needs to be able to clearly depict the future of the school and point out the direction for teachers and students to work together.	3.55	1.04	high	3.91	1.04	high
3	Developing reasonable funding budget for educational information. Funds are an important guarantee for promoting the process of educational information. The principal needs to ensure sufficient funding	4.09	.70	high	3.73	1.01	high

Table 4.13 (Continue)

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
	investment, and at the same time, allocate it reasonably to avoid waste, and adjust the budget in a timely manner according to the actual situation of the school.						
4	Promote the abilities of all teachers and students in information technology. This includes providing systematic information technology training for managers, teachers, and students, enabling them to fully utilize information technology to improve teaching quality, enhance learning outcomes, and optimize school management processes.	3.82	1.17	high	3.64	.92	high
5	development and optimization of medium - and long-term goals for educational information. The goal should not only be forward-looking, but also practical and actionable. With the development of the school and changes in the external environment, principals need to regularly review and adjust these goals to ensure they are always consistent with the overall strategy of the school.	4.45	.52	high	3.9	.83	high
	Total	**4.17**	**.72**	**high**	**3.7**	**.95**	**high**

According to Table 4.13, the vision have 5 enhancement strategies for suitablity and feasibility, and the highest suitability figure is "Sustainable development and optimization of medium- and long-term goals for information technology in education." ($\bar{x}$ = 4.45), followed by "Sustainable development of a reasonable financial budget for information technology in education." ($\bar{x}$ = 4.09), followed by "Promoting the principal's ability to outline the school's vision, set goals, and clarify the way forward." ($\bar{x}$ = 3.55). The highest feasibility data was "Facilitating the principal's ability to provide technology training and learning resources for teachers to facilitate their professional development." ($\bar{x}$ = 3.91) and "Continuously develop and optimize medium- and long-term goals for information technology in education." ($\bar{x}$ = 3.91), with the lowest figure being "Promote the principal's ability to efficiently implement the school's work plan." ($\bar{x}$ = 3.64).

Table 4.14 Mean and standard deviation of the suitability and feasibility of strategies for developing information leadership for Principal of High School in Guangxi

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
Enhancing Leader Characteristics							
1	Promote principals to demonstrate a high level of professional ethics and dedication, and fully devote themselves to the management and development of the school.	3.82	1.08	high	3.91	1.38	high
2	Enhance the principal's understanding of school culture and create a positive and upward working atmosphere.	3.55	.93	high	4.00	1.00	high
3	Promote the principal to establish effective communication channels, actively listen to the opinions and suggestions of teachers, and provide them with timely and accurate answers.	4.00	.89	high	4.27	1.01	high
4	Development Principal actively encourages teachers to propose innovative viewpoints and suggestions, and stimulates the wisdom of the team.	4.36	.67	high	4.00	1.18	high
5	Promote principals to actively guide and motivate teachers to actively learn new technologies, cultivate their technical literacy and innovation ability.	4.73	.47	highst	4.09	.94	high

Table 4.14 (Continue)

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
6	Promote principals to provide technical training and learning resources for teachers, and promote their professional development.	4.45	.93	high	4.55	.69	highst
7	Development Principal firmly believes in the role of educational information in promoting the development of the school, and actively faces challenges and difficulties.	4.36	.50	high	4.45	.69	high
8	Enhance the principal's sense of identification and confidence in the information of team education.	4.00	.63	high	4.00	1.0	high
9	Sustainability ensures the timely and accurate implementation of national policies by principals, and improves the timeliness of school work.	4.36	.50	high	4.27	.79	high
10	Develop effective implementation mechanisms for principals to ensure the smooth implementation of policies at the school level.	4.09	.70	high	3.91	.70	high
11	Development Principal should demonstrate firm determination and strong willpower to overcome difficulties and obstacles, In the process of promoting educational information.	4.45	.52	high	4.36	.67	high

Table 4.14 (Continue)

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
12	Enhance the principal's management team to remain calm and firm in the face of challenges, and work together to tackle difficulties.	3.82	.75	high	4.00	1.00	high
	Total	**3.55**	**1.0**	**high**	**4.15**	**.92**	**high**

According to Table 4.14, there are 12 leader characteristics that enhance the suitablity and feasibility of strategies, and the highest suitability figure is "Promote principals to actively guide and motivate teachers to actively learn new technologies, and to develop their technological literacy and innovation skills." ($\bar{x}$ = 4.73), followed by "Developing principals to show firm determination and strong willpower to overcome difficulties and obstacles in promoting information technology in education." ($\bar{x}$ = 4.45), and the lowest figure was "The developmental principal actively encourages teachers to come up with innovative ideas and suggestions to stimulate the wisdom of the team." ($\bar{x}$ = 3.36). The highest feasibility data was "Promoting principals to provide technology training and learning resources for teachers to facilitate professional development." ($\bar{x}$ = 4.55), followed by "Developing principals to show strong determination and strong willpower to overcome difficulties and obstacles in the process of promoting information technology in education." ($\bar{x}$ = 4.36), and the lowest figure is "Developing principals to establish effective implementation mechanisms to ensure the smooth implementation of policies at the school level." ($\bar{x}$ = 3.91).

Table 4.15 Mean and standard deviation of the suitability and feasibility of strategies for developing information leadership for Principal of High School in Guangxi

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
Developing Environmental Factors							
1	Sustainable principals to demonstrate a high level of professional ethics and dedication, and fully devote themselves to the management and development of the school.	4.55	.52	highst	4.09	.70	high
2	Enhance the principal's understanding of school culture and create a positive and upward working atmosphere.	4.18	1.0	high	3.73	.90	high
3	Promote the principal to establish effective communication channels, actively listen to the opinions and suggestions of teachers, and provide them with timely and accurate answers.	4.55	.69	highst	3.82	.87	high
4	Development Principal actively encourages teachers to propose innovative viewpoints and suggestions, and stimulates the wisdom of the team.	4.73	.47	highst	4.36	.81	high
5	Promote principals to actively guide and motivate teachers to actively learn new technologies, cultivate their technical literacy and innovation ability.	3.91	.83	high	3.55	.93	high

Table 4.15 (Continue)

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
6	Promote principals to provide technical training and learning resources for teachers, and promote their professional development.	3.55	.82	high	3.55	1.57	high
7	Development Principal firmly believes in the role of educational information in promoting the development of the school, and actively faces challenges and difficulties.	3.73	.79	high	3.45	1.37	medium
8	Enhance the principal's sense of identification and confidence in the information of team education.	3.64	.67	high	3.09	1.22	medium
	Total	**4.1**	**.73**	**high**	**3.70**	**1.05**	**high**

According to Table 4.15, there are 8 environmental factors that enhance the suitablity and feasibility of the strategies, with the highest suitability figure being "Promoting principals' in-depth understanding of the roles of the national and Guangxi wisdom platforms" ($\bar{x}$ = 4.73), followed by "Sustainable principals' creation of a favorable school environment. " ($\bar{x}$ = 4.55), and the lowest figure was "Promoting principals' unified management of school digital resources." ($\bar{x}$ = 3.55). The highest feasibility figure was "Promoting principals' in-depth understanding of the role of the national and Guangxi wisdom platforms." ($\bar{x}$ = 4.36), followed by "Sustainable principals create a favorable school environment." ($\bar{x}$ = 4.09), and the lowest figure was "Promoting the incentive mechanism of education information." ($\bar{x}$ = 3.09).

Table 4.16 Mean and standard deviation of the suitability and feasibility of strategies for developing information leadership for Principal of High School in Guangxi

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
Developing Teamwork ability							
1	Develop Principal reinforces the idea of "people-oriented management", genuinely cares about the development and needs of teachers and students, and creates a harmonious and beneficial working and learning environment for them.	3.64	.81	high	3.64	1.43	high
2	Develop principals to encourage a culture of open communication, listen to different opinions, and stimulate the team's spirit of innovation.	3.55	.82	high	3.73	.79	high
3	promote principals engage in regular open and frank dialogues with teachers to discuss and resolve challenges and problems at work, and to encourage teachers to share their experiences and innovative ideas.	3.64	.81	high	3.64	.67	high
4	promote principals effective feedback mechanisms among to ensure a two-way flow of information.	3.73	.90	high	4.00	1.34	high
5	Develop principals to actively seek opportunities for collaboration with various types of external organizations, including enterprises, universities and research institutes, etc., gain access to more resources, technologies and ideas.	3.36	.81	medium	3.45	1.21	medium

Table 4.16 (Continue)

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
6	promote principals to expand the scope of cooperation, which is not only limited to resource sharing, but also project cooperation, research cooperation, etc., so as to promote the common progress of the school and the society.	4.00	.89	high	3.73	.79	high
7	promote principals gain a deeper understanding of the ideals and aspirations of teachers and students, and to integrate them with the school's development plan, so as to form a common vision and goal.	3.91	.94	high	3.73	1.27	high
8	develop principals to encourage teachers and students to participate in school decision-making and to ensure that their voices are heard and included in the decision-making process.	3.91	1.14	high	3.55	1.37	high
	Total	**3.72**	**.89**	**high**	**3.68**	**1.1**	**high**

According to Table 4.16, there are 8 strategies to enhance the suitablity and feasibility of teamwork ability, with the highest suitability figure being "promoting principals to expand the scope of cooperation beyond resource sharing" ($\bar{x}$ = 4.00), followed by "promoting principals to have a deeper understanding of the ideals and expectations of teachers and students, and integrating them with the development plan to form a common vision and goals" ($\bar{x}$ = 3.91), and the lowest figure being "developing principals to actively seek cooperation opportunities with various external organizations" ($\bar{x}$ = 3.91). and expectations of teachers and students, integrating them with the school's development plan to form a common vision and goals" ($\bar{x}$ = 3.91), and the lowest data was "Developing principals to actively seek opportunities for collaboration with various outside organizations" ($\bar{x}$ = 3.36). The highest feasibility figure was "Promote effective feedback mechanisms for principals to ensure a two-way flow of information." ($\bar{x}$ = 4.00), followed by "Developing principals to encourage a culture of open communication, listening to diverse opinions, and stimulating team innovation." ($\bar{x}$ = 3.73), and the lowest figure was "The developmental principal encourages faculty and student participation in school decision-making to ensure that their voices are heard and included in the decision-making process." ($\bar{x}$ = 3.55).

Table 4.17 Mean and standard deviation of the suitability and feasibility of strategies for developing information leadership for Principal of High School in Guangxi

(N=11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
Elevate Data Driven Decision Support							
1	Improve principals' ability to use data tools to assess students' personal development. Principals need to master the use of data tools to analyze individual students' progress and needs in terms of academics, skills, and interests in order to provide more personalized educational support to students.	4.00	.63	high	3.09	.83	medium
2	Improve principals' confidence that data decisions achieve desired results. Principals should make decisions based on data and analytics, and have confidence that data-driven decisions lead to positive results, while making adjustments and optimizations based on actual results.	4.18	.40	high	3.55	1.13	high
3	Improve principals' ability to use data collection and analysis to make decisions on certain matters. Principals should have the ability to collect, organize and analyze data, and use data to provide a basis for decision-making and to improve the scientificity and accuracy of decisions.	4.00	.89	high	3.82	1.17	high

Table 4.17 (Continue)

(N =11)

No	Strategies for developing information leadership for principal	suitability			feasibility		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
4	Improve principals' awareness of data security. Principals need to pay atention to data security and privacy protection, ensure the compliant use and storage of data, and avoid data leakage and misuse.	4.00	1.00	high	3.73	1.19	high
5	Develop principals' support mechanisms for data-driven decision-making. Principals need to establish a comprehensive data collection, analysis and reporting system to ensure the accuracy and timeliness of data and provide strong support for decision-making.	3.91	.83	high	3.82	.75	high
6	Enhance the data literacy of the principal's management team. Principals should develop their team's data awareness and analytical skills so that team members can understand and apply data-driven decision-making methods.	4.18	.98	high	3.64	1.12	high
7	Enhance principal's continuous optimization of the data-driven decision-making process. The principal should continuously optimize the decision-making process based on data analysis and actual results, and continuously improve the mechanism and methods of data-driven decision-making.	4.18	.60	high	4.00	.77	high
	Total	**4.06**	**.76**	**high**	**3.66**	**.99**	**high**

According to Table 4.17, data-driven decision support has 7 enhancement strategies for suitability and feasibility, with the highest suitability data being "Increasing principals' confidence that data decisions will have the desired effect" ($\bar{X}$ = 4.18) and "Facilitating principals' continuous optimization of data-driven decision-making processes" ($\bar{X}$ = 4.18), and the lowest data being "Developing principals' mechanisms to support data-driven decision-making" ($\bar{X}$ = 3.91). "(X = 4.18), and the lowest was "Developing support mechanisms for principals to make data-driven decisions" ($\bar{X}$ = 3.91). The highest feasibility data was "Facilitate principals' processes for continuously optimizing data-driven decision making" ($\bar{X}$ = 4.00), followed by "Develop principals' support mechanisms for data-driven decision making" ($\bar{X}$ = 3.82), and the lowest data was "Improve principals' ability to utilize data tools to assess individual student development" ($\bar{X}$ = 3.09).

Chapter 5
Conclusion Discussion and Recommendations

This research develops strategies to improve the enhancement of information leadership of high school principals in Guangxi. This study has 3 purposes 1). To study the current situation of information leadership for principal of high school in Guangxi, 2) To develop strategies for information leadership for principal of high school in Guangxi, and 3) To evaluate the suitability and feasibility strategies for developing information leadership for principal of high school in Guangxi. Guangxi high school principals' information leadership includes 5 aspects: 1) vision, 2) leader characteristics, 3) environmental factors, 4) teamwork ability, and5) data-driven decision support.

The sample group for this study was principal of high schools in Guangxi, and 14 high school principals were invited to the focus group. The instruments used in the study were documentary analysis, questionnaire survey, structured interviews, and Delphi method. The statistical methods used to analyze the data were frequency and percentage ratio, mean and standard deviation.

The conclusions, discussion and recommendations of this study are as follows:

Conclusion

The objectives of this study was to develop strategies to improve the enhancement of information leadership for principal of high school in Guangxi. The researcher summarized the findings in 3 parts as follows:

Part 1: To study the current situation of information leadership for principal of high school in Guangxi

Part 2: To develop strategies for developing information leadership for principal of high school in Guangxi.

Part 3: To evaluate the suitability and feasibility strategies for developing information leadership for principal of high school in Guangxi.

Part 1: Studying the current situation of information leadership for principal of high school in Guangxi

The research found that the current situation of information leadership of high school principals in Guangxi, that is in the middle to upper range. Among the 5 sub-dimensions, the highest level is Teamwork ability. Next is Vision and the lowest level is Leader Characteristics.

Vision, the research found that current situation of vision of information leadership for principal of high school in Guangxi, that is in the middle to upper range. Of the 11 questions, the highest score was the principal can complete the plan in an orderly manner, followed by the principal often describes the school's desirable vision, goals, and direction, and the lowest score was The principal has developed a vision plan for the development of information technology in the long, medium, and short term. The lowest score was "The principal develops an informational vision for the school's development in the long, medium, and short term.

Leader Characteristics, the research found that current situation of leader characteristics of information leadership for principal of high school in Guangxi, that is in the middle to upper range. Among the 13 questions in this dimension, the highest score is the principal loves their job and has a strong sense of enterprise and drive, followed by the principal listens patiently to teachers' questions and answers them, and the lowest score is the principal listens patiently to teachers' questions and answers them, while the lowest score is the principal is a good teacher. and the lowest score was the principal can be somewhat self-centered and not very considerate of other people's feelings

Environmental Factors, the research found that. current situation of Environmental factors of information leadership for principal of high school in Guangxi, that is in the upper middle level. Among the 14 questions, the highest score is the principal's campus environment is highly purified, beautified, and civilized, followed by principals' school teachers actively participate in information training, and the lowest score is "principals often participate in information-related training. Teachers at the principal's school actively participate in information technology

training and take the initiative to learn new technologies, and the lowest score was "The principal often participates in information technology related training.

Teamwork Ability, the research found that. current situation of Teamwork ability of information leadership for principal of high school in Guangxi, That is in the middle to upper range. Among the 12 questions, the highest score is "Principals implement the concept of people-oriented management in every aspect, followed by the principal frequently communicates and discusses workplace issues with teachers. and the lowest score was the principal's school uses the campus website to summarize and reflect on feedback.

Data-driven decision support, the research found that current situation of data-driven decision support of information leadership for principal of high school in Guangxi, That is in the middle to upper range. Among the 13 questions, the highest score is "Principals use data tools to assess students' personal development, followed by "Principals believe that data decision making will achieve the expected results and principals make decisions on some matters based on data analysis collected in schools, and the lowest score is "Principals have a high awareness of data security. believes that data decisions will have the desired effect and that the principal makes decisions on some matters based on the analysis of data collected at the school, and the lowest score was "The principal has a high level of awareness of data security

Part 2: Strategy for developing Information Leadership for Principal of High School in Guangxi

Developing Strategy for Information Leadership for Principal of High School in Guangxi, that be divided into 5 dimensions, containing 40 metrics. There are 5 strategies to promote vision, 12 strategies to enhancing leader characteristics, 8 strategies to developing environmental factors, 8 strategies to developing teamwork ability, and 7 strategies to elevate data-driven decision support.

Promoting Vision contains 5 strategies and they are as described below:

1. Promote principal's ability to efficiently implement the school's work plan. By developing a clear and comprehensive work plan, it ensures that all school affairs are in order while focusing on the effectiveness and sustainability of the work.

2. Promote principal's ability to outline the school's vision, set goals to strive for and clarify the way forward. The vision is the long-term goal of the school, while the goals are the short-term roadmap for realizing the vision. Principals need to be able to draw a clear picture of the school's future and point the way for teachers and students to work together.

3. Developing reasonable funding budget for educational information. Funds are an important guarantee for promoting the process of educational information. The principal needs to ensure sufficient funding investment, and at the same time, allocate it reasonably to avoid waste, and adjust the budget in a timely manner according to the actual situation of the school.

4. Promote the competence of all teachers and students in information technology. This includes the provision of systematic IT training for administrators, teachers and students to enable them to make full use of IT to enhance the quality of teaching and learning, as well as to optimize school management processes.

5. Development and optimization of medium - and long-term goals for educational information. The goal should not only be forward-looking, but also practical and actionable. With the development of the school and changes in the external environment, principals need to regularly review and adjust these goals to ensure they are always consistent with the overall strategy of the school.

Enhancing Leader Characteristics consists of 12 strategies, which are described below:

1. Promote the principal's demonstration of a high level of professionalism and dedication to the management and development of the school.

2. Promote the principal's commitment to building a positive school culture.

3. Promote principals to establish effective communication channels, actively listen to teachers' opinions and suggestions, and provide them with timely and accurate answers.

4. Developing principals to actively encourage teachers to put forward innovative ideas and suggestions to stimulate the wisdom of the team.

5. Promote principals to actively guide and motivate teachers to actively learn new technologies, cultivate their technical literacy and innovation ability.

6. Promote principals to provide technical training and learning resources for teachers, and promote their professional development.

7. Promoting the development of the school, and actively faces challenges and difficulties.

8. Enhance principals' recognition of and confidence in the team's information technology in education.

9. Sustainably ensure principals' timely and accurate implementation of national policies and improve the timeliness of school work.

10. Develop principals to establish an effective implementation mechanism to ensure the smooth implementation of policies at the school level.

11. Develop principals to show firm determination and strong willpower to overcome difficulties and obstacles in promoting education information.

12. Promote principals' management team to remain calm and determined in the face of challenges and to work together to cope with difficulties.

Developing Environment factors consists of 8 strategies as follows:

1. Sustainable principals create a favorable campus environment. Principals need to pay atention to the purification, beautification and civilization of the campus environment to create a positive, healthy and harmonious campus atmosphere that provides good conditions for teachers and students to learn and work.

2. Enhance principals to motivate and guide teachers to actively participate in new technology training, to cultivate the spirit of active learning and exploration, and to enhance the technology level of the teaching force.

3. Enhance teachers' ability to integrate information technology with their subjects. Teachers of all subjects should have the ability to effectively integrate information technology with subject teaching and be able to use information technology means to improve the quality and effectiveness of teaching.

4. Promote principals' in-depth understanding of the role of the national and Guangxi wisdom platforms. Principals need to increase their interpretation of relevant policy documents and clarify the important position and role of the wisdom platform in education information so as to better guide the school's education information work.

5. Develop the principal's construction of the smart campus and smart education system platform. Principals need to comprehensively plan and implement the construction of smart campuses in their schools, establish a perfect education information platform, and provide rich digital education resources and services.

6. Promote principals' unified management of school digital resources. Principals need to establish a sound digital resource management system to ensure the rational use and effective management of digital resources and avoid waste and abuse of resources.

7. Enhance teachers' ability to use digital education resources appropriately. Principals need to strengthen training and guidance for teachers' ability to use digital educational resources to ensure that teachers can make reasonable and effective use of digital educational resources to improve teaching and learning effects.

Incentive mechanism for promoting education information. Principals need to develop appropriate incentive mechanisms to encourage teachers and students to actively participate in education information, stimulate their innovative spirit and creativity, and promote the in-depth development of education information in schools.

Developing teamwork ability contains 8 strategies, they are as follows:

1. Develop principals to strengthen the idea of "people-oriented management", really care about the development and needs of teachers and students, and create a harmonious and beneficial working and learning environment for them. 2. develop principals to encourage open communication, and to encourage teachers and students to participate actively in the work of education information.

2. Develop principals to encourage a culture of open communication, listen to different opinions, and stimulate the team's spirit of innovation.

3. Promote principals engage in regular open and frank dialogues with teachers to discuss and resolve challenges and problems at work, and to encourage teachers to share their experiences and innovative ideas.

4. Promote effective feedback mechanisms among principals to ensure a two-way flow of information.

5. Develop principals to actively seek opportunities for collaboration with various types of external organizations, including enterprises, universities and research institutes, etc., in order to gain access to more resources, technologies and ideas.

6. promote principals to expand the scope of cooperation, which is not only limited to resource sharing, but also project cooperation, research cooperation, etc., so as to promote the common progress of the school and the society.

7. Promote principals gain a deeper understanding of the ideals and aspirations of teachers and students, and to integrate them with the school's development plan, so as to form a common vision and goal.

8. Develop the principal's encouragement of the participation of teachers and students in school decision-making and to ensure that their voices are heard and included in the decision-making process.

Elevate Data Driven Decision Support consists of 7 strategies, which are listed below:

1. Improve principals' ability to use data tools to assess individual student development. Principals need to master the use of data tools to analyze individual student progress and needs in terms of academics, skills, and interests in order to provide more personalized educational support for students.

2. Improve principals' confidence in data decisions to achieve desired results. Principals should make decisions based on data and analytics, and trust that data-driven decisions will lead to positive results, while making adjustments and optimizations based on actual results.

3. Improve principal's ability to use data collection and analysis to make decisions on certain matters. The principal should have the ability to collect, organize and analyze data, use data to provide a basis for decision-making, and improve the scientificity and accuracy of decision-making.

4. Improve principals' awareness of data security. Principals need to pay atention to data security and privacy protection, ensure compliant use and storage of data, and avoid data leakage and misuse.

5. Develop principals to establish a support mechanism for data-driven decision-making. Principals need to establish a comprehensive data collection,

analysis and reporting system to ensure the accuracy and timeliness of data and provide strong support for decision-making.

6. Enhance the data literacy of the principal's management team. The principal should develop the team's data awareness and analytical skills so that team members can understand and apply data-driven decision-making methods.

7. Enhance the principal's continuous optimization of the data-driven decision-making process. The principal should continuously optimize the decision-making process based on data analysis and actual results, and continuously improve the mechanism and methods of data-driven decision-making.

Part 3: Evaluate the suitability and feasibility of strategies for developing information leadership for principal of high school in Guangxi.

The date showed that the suitability and feasibility of Vision has 5 enhancement strategies, with the highest suitability figure being "Vision", followed by "Data Driven Decision Support", and the lowest figure being Leader Characteristics. Support", and the lowest was "Leader Characteristics", followed by "Vision", and the lowest data was for Data Driven Decision Support.

Promoting Vision, the suitability and feasibility of vision have 5 enhancement strategies for suitablity and feasibility, and the highest suitability figure is "Sustainable development and optimization of medium- and long-term goals for information technology in education.", followed by "Sustainable development of a reasonable financial budget for information technology in education.", followed by "Promoting the principal's ability to outline the school's vision, set goals, and clarify the way forward.". The highest feasibility data was "Facilitating the principal's ability to provide technology training and learning resources for teachers to facilitate their professional development." and "Continuously develop and optimize medium- and long-term goals for information technology in education.", with the lowest figure being "Promote the principal's ability to efficiently implement the school's work plan."

Enhancing Leader Characteristics the suitability and feasibility of 12 leader characteristics that enhance the suitablity and feasibility of strategies, and the highest suitability figure is "Promote principals to actively guide and motivate teachers to actively learn new technologies, and to develop their technological literacy and

innovation skills.", followed by "Developing principals to show firm determination and strong willpower to overcome difficulties and obstacles in promoting information technology in education.", and the lowest figure was "The developmental principal actively encourages teachers to come up with innovative ideas and suggestions to stimulate the wisdom of the team.". The highest feasibility data was "Promoting principals to provide technology training and learning resources for teachers to facilitate professional development.", followed by "Developing principals to show strong determination and strong willpower to overcome difficulties and obstacles in the process of promoting information technology in education." and the lowest figure is "Developing principals to establish effective implementation mechanisms to ensure the smooth implementation of policies at the school level."

Developing Environmental Factors, the suitability and feasibility of 8 environmental factors that enhance the suitablity and feasibility of the strategies, with the highest suitability figure being "Promoting principals' in-depth understanding of the roles of the national and Guangxi wisdom platforms", followed by "Sustainable principals' creation of a favorable school environment. ", and the lowest figure was "Promoting principals' unified management of school digital resources.". The highest feasibility figure was "Promoting principals' in-depth understanding of the role of the national and Guangxi wisdom platforms.", followed by "Sustainable principals create a favorable school environment.", and the lowest figure was "Promoting the incentive mechanism of education information."

Developing Teamwork ability, the suitability and feasibility of 8 strategies to enhance the suitablity and feasibility of teamwork ability, with the highest suitability figure being "promoting principals to expand the scope of cooperation beyond resource sharing", followed by "promoting principals to have a deeper understanding of the ideals and expectations of teachers and students, and integrating them with the development plan to form a common vision and goals", and the lowest figure being "developing principals to actively seek cooperation opportunities with various external organizations". and expectations of teachers and students, integrating them with the school's development plan to form a common vision and goals", and the lowest data was "Developing principals to actively seek

opportunities for collaboration with various outside organizations". The highest feasibility figure was "Promote effective feedback mechanisms for principals to ensure a two-way flow of information.", followed by "Developing principals to encourage a culture of open communication, listening to diverse opinions, and stimulating team innovation.", and the lowest figure was "The developmental principal encourages faculty and student participation in school decision-making to ensure that their voices are heard and included in the decision-making process."

Elevate Data Driven Decision Support, the suitability and feasibility of data-driven decision support has 7 enhancement strategies for suitability and feasibility, with the highest suitability data being "Increasing principals' confidence that data decisions will have the desired effect" and "Facilitating principals' continuous optimization of data-driven decision-making processes", and the lowest data being "Developing principals' mechanisms to support data-driven decision-making". and the lowest was "Developing support mechanisms for principals to make data-driven decisions". The highest feasibility data was "Facilitate principals' processes for continuously optimizing data-driven decision making", followed by "Develop principals' support mechanisms for data-driven decision making", and the lowest data was "Improve principals' ability to utilize data tools to assess individual student development".

Discussion

The purpose of this study was to develop strategies for improving the enhancement of information leadership for principal of high school in Guangxi. The researcher summarized the results of the study into 3 parts as follows:

Part 1: To study the current situation of information leadership for principal of high school in Guangxi

Part 2: To develop strategies for information leadership for principal of high school in Guangxi.

Part 3: To evaluate the suitability and feasibility strategies for developing information leadership for principal of high school in Guangxi.

Part 1: Study the current situation of information leadership for principal of high school in Guangxi

The current status of information leadership for principal of high school in Guangxi, that is at a high level, taking into account the results of this study, in descending order The results of this study, in descending order, the highest level is teamwork ability, followed by vision, data-driven decision support and environmental factors, and the lowest mean value is leader characteristics. The statistical results of the above data show that the degree of information leadership level of Guangxi high school principals is high, but of course there is still a lot of room for improvement from the high level value. This also shows that this study is very meaningful.

Promoting Vision, The high mean value vision, which is due to Harlinger and Heck (2011) Building a Common Vision to Enhance Educational Management Efficiency: Optimization Strategies for School and Student Learning from the Perspective of Information Leadership. Establishing a shared vision for improving educational management to influence the learning process of schools and students. The core position of leadership and vision in information-based leadership is clearly defined in the interpretation of the National Standards for Educational Technology in the United States (Educational Technology Association, 2008, p.53). The National College for School Leadership (NCSL) in the UK points out that information technology leadership mainly includes vision. Wu Plenum (2008, p.37) "Information Leadership under Vision Leadership: The Strategic Significance of Planning Skills and Knowledge for School Development." The "vision" includes the skills and knowledge that leaders should possess for planning, and emphasizes the importance of making all members understand the importance of planning. Wang Yaqiong (2016, p.52) "Analysis of Principal Information Leadership: Resource Integration and Goal Achievement Path with Vision Planning as the Core". The definition of principal information leadership includes planning the school's development vision as the process of mobilizing all resources to improve and achieve goals. The vision plays a particularly important role in information leadership. Lu Yan (2018, p.21) "Reshaping Leadership under the Background of Educational Infoumation: The Role of Continuous Planning and Revision of Vision in Achieving School Goals". In the definition of

information leadership, the importance of educational infoumation is clearly defined, and at the same time, the vision must be continuously planned and revised to achieve the established goals of the school. The above 4 scholars and two documents all emphasized the importance of vision and planning, and survey data shows consistency with them. Both the education management practices from an international perspective and the in-depth research on information leadership by domestic scholars emphasize the core position and key role of "vision" in information leadership. By building a shared vision, not only can it provide direction for the information development of the school, but it can also effectively mobilize the enthusiasm and creativity of all teachers and students, promote the optimization and efficiency improvement of the learning process. Specifically, information leadership requires leaders not only to have a forward-looking strategic vision and accurately grasp the development trend of educational infoumation, but also to master scientific planning skills and knowledge, and transform visions into actionable action plans. In this process, the role of leaders is not only the proposer of the vision, but also the disseminator and practiti1r of the vision. Through effective communication mechanisms, it is necessary to enable all teachers and students in the school to deeply understand and identify with this vision, thereby forming a strong cohesion and centripetal force Conclusion: In the context of the information age, building and continuously improving a shared vision is the key to enhancing information leadership, and plays an irreplaceable role in promoting the overall development of schools, improving the quality of education, and promoting the comprehensive development of students.

Enhancing Leader Characteristics, The high mean value leader characteristics, due to Darren Rowse (2019, p.15) "The Key Characteristics of Leaders in the Digital Age: Innovative Thinking, Suitablity, and the Shaping and Influence of Technological Understanding". This book explores the key characteristics of leaders in the digital age, including innovative thinking, suitablity, technological understanding, etc., indicating that leadership characteristics are very important in information technology leadership. However, in practical research, these are internal human factors that are difficult to change. Maintaining agility and foresight in a constantly

changing environment is mainly controlled by various factors in the leadership characteristics. Paul Leinwand, Andrew McAfee & Erin Meyer. (2018, p.53) "Beyond Characteristics: A Comprehensive Analysis and Practical Path of Digital Leadership." This book delves into various aspects of digital leadership, particularly the characteristics of leaders. Mike Walsh. (2017, p.21) "Leadership Personality Factors and Digital Transformation: The Core Drivers of Digital Leadership." This book explores the core elements of digital leadership and emphasizes that the key role in driving organizational digital transformation is leadership personality factors, which are leadership characteristics. The survey data results appear to be consistent with the views of the 3 scholars menti1d above. We can clearly see the complexity and multidimensional characteristics of leadership in the digital age. Darren Rowse's research emphasizes the central role of personal characteristics of leaders in information-based leadership, particularly elements such as innovative thinking, suitablity, and technological understanding, which are crucial for leaders to maintain agility and foresight in constantly changing environments. However, he also pointed out the practical challenges that these internal elements are difficult to easily change, highlighting the long-term and systematic nature of leadership development. The research by Paul Leinwand, Andrew McAfee, and Erin Meyer further broadens our horizons, not only focusing on the characteristics of leaders, but also delving into various aspects of digital leadership, including organizational culture, strategic planning, process optimization, and other dimensions. Their work demonstrates that digital leadership is not just a display of individual abilities, but also a reflection of the overall organizational capabilities and culture, requiring a comprehensive perspective and systematic thinking. Mike Walsh's research emphasizes the crucial role of leader personality factors in driving organizational digital transformation. He believes that the personality traits of leaders, such as courage, determination, curiosity, etc., are important driving forces for change. This viewpoint echoes Darren Rowse's research, further confirming the importance and influence of personal traits of leaders in the context of the digital age. In summary, leadership in the digital age is a complex and multidimensional concept that requires leaders not only to possess key characteristics such as innovative thinking, suitablity, and technological

understanding, but also to play a leading role in organizational culture, strategic planning, and other aspects. At the same time, the personality factors of leaders are also an undeniable force driving digital transformation. Therefore, cultivating and enhancing digital leadership requires comprehensive consideration and systematic promotion from multiple levels, including individuals, organizations, characteristics, and cultures. Only in this way can we maintain a competitive advantage and achieve sustainable development in the rapidly changing digital age.

Developing environmental factors, The high mean value of environmental factors, which is due to Levin, T. and Schlum, L. (2013, p.42) "The Deep Impact of Environmental Factors on Information Leadership and Its Response Strategies" It is pointed out that environmental factors have a significant impact on information leadership. Chen Wei & Li Jin (2016, p.41) "Creating a Positive Environmental Atmosphere: The Key Path to Enhancing Information Leadership" points out the importance of an environmental atmosphere. Liao Jianqiao (2010, p.22) "Leadership Behavior and Organizational Goal Achievement in Specific Environments: An Empirical Study." It is believed that leadership refers to the activities and processes that can only achieve organizational goals in a specific environment, emphasizing the importance of the environment. Tong Zhongxian (2002, p.32) Research on the Construction of Comprehensive Leadership Ability Based on Work Environment. Leadership is understood as a kind of comprehensive ability generated based on the leader's work environment, which also reflects the importance of environmental factors. Sun Zhenxiang and others (2014, p.70) "Research on the Strategy of Information Environment Construction from the Perspective of Information Leadership". In the definition of information leadership, information environment construction is regarded as an important element. Sun Jingya (2022, p.12) "The Interactive Relationship between Information Leadership and Organizational Environment: A Theoretical and Empirical Study" also defines the organizational environment as an important factor in defining information leadership. Through the above 6 scholars, it can be seen that their views on the importance of environmental factors in information leadership are consistent with those of other scholars, as evidenced by the survey data results. Environmental factors play a crucial role in

information leadership. Whether it is the impact of external environmental changes on leadership behavior or the promotion of leadership effectiveness by internal environmental atmosphere, both demonstrate the importance of environmental factors. Specifically, scholars such as Levin and Schlum have pointed out that changes in external technological, policy, and market environments can directly or indirectly affect information leadership, requiring leaders to have a high degree of suitablity and foresight to respond to constantly changing challenges. Domestic scholars such as Chen Wei and Li Jin emphasized the importance of creating an internal organizational environment to enhance information leadership. A good environmental atmosphere can stimulate members' enthusiasm and creativity, providing strong support for information transformation. The research of scholars such as Liao Jianqiao and Tong Zhongxian further reveals the close relationship between leadership and the environment, pointing out that leadership does not exist in isolation, but rather is a comprehensive force generated based on specific work environments. This viewpoint not only deepens our understanding of leadership, but also provides us with new ideas for optimizing leadership from an environmental perspective. Scholars such as Sun Zhenxiang and Sun Jingya's research directly focus on the relationship between information leadership and information environment, emphasizing that information environment construction, as an important comp1nt of information leadership, plays an irreplaceable role in promoting organizational digital transformation. Their research provides us with specific strategies and methods on how to build and optimize an information environment to enhance leadership. In summary, environmental factors are an indispensable part of information leadership, running through the entire process of leadership behavior and having a profound impact on the formation, development, and effectiveness of leadership. Therefore, in the process of enhancing information leadership, we must attach great importance to the role of environmental factors, and create favorable conditions for the exercise of leadership by optimizing internal and external environments.

Developing Teamwork ability, The highest mean value of teamwork ability, which is due to Zheng Luhong and others The team collaboration and communication skills in information leadership (2020) indicate that the main elements of information

leadership are the ability to collaborate and communicate within a team. Only under such circumstances can we promote the process of information technology and unleash the specific potential of all members. Through the ability to collaborate and communicate, unite as 1 and get closer to the goal. Ciulla. (2002, p.237) states in the essence of leadership that leadership is the ability of a leader to collaborate with followers. Harlinger and Heck In 2011, they defined educational management as the process in which managers promote schools and influence students' learning through teamwork and communication in educational management. The current data research results indicate that the level of information technology leadership among high school principals in Guangxi is relatively high. This is consistent with the research emphasis of the 3 scholars menti1d above. This study explores the importance of teamwork and communication skills in promoting school information management through in-depth exploration of information leadership. Research has found that teamwork and communication skills are the core of information leadership, playing a crucial role in unleashing the potential of team members, fostering unity, and achieving goals. In the context of infoumation, leaders can significantly promote the improvement of school infoumation management level through effective cooperation with followers and efficient communication, thereby having a positive impact on the learning process of schools and students. These findings provide new perspectives and practical guidance for improving the efficiency of school information management.

Elevate data-Driven Decision Support, The high mean value of data-driven decision support, which is due to Henriquez, A. S. (2016, p.32) work on data-driven decision-making: the core elements and practices of information leadership The leadership of information includes data-driven decision-making. Robert W. Bland & Paul J. N. Horton. (2013, p.24) discuss leadership in the information age: the important impact of data analysis on leadership, and place the influence of data analysis on leadership in the information age in a more important position. Thomas H. Davenport & Jennifer A. Harris. (2017, p.38) In Data Driven Leadership: How to Use Data to Guide Management Decisions and Its Applications in Various Management Fields Identify how leaders can use data to guide management decisions, including data analysis

tools, methods, and their applications in various management fields. It particularly emphasizes the importance of data-driven decision-making and provides practical tools and strategies. Especially in the era of global digital transformation, various industries are using data to make scientific analysis and judgments for work, study, research, and other directions. Data driven decision support is crucial for the success of modern organizations. By utilizing data to guide decisions and actions, organizations can improve the accuracy and efficiency of decision-making, optimize resource allocation and risk management, promote innovation and continuous improvement, enhance competitiveness, and improve employee skills and knowledge. Therefore, in the information society, principals attach great importance to and expect the adoption of data-driven decision support methods and their integration into daily management and operations. The above 5 scholars pointed out the importance of data-driven management in daily organizational management, and the survey data results showed consistency with their scholars' views. Based on the above content, it can be concluded that in the information age, data-driven decision-making has become a key comp1nt of leadership. Leaders need to master data analysis skills in order to more effectively guide management decisions. The application of data analysis tools and methods can help leaders make more informed and accurate decisions in various management fields. Through data-driven decision-making, organizations can improve their efficiency and effectiveness, thus better adapting to the development needs of the information age. These studies emphasize the importance of data analysis in leadership and provide practical tools and strategies for leaders to better utilize data for decision-making.

Part 2: Develop strategies for information leadership for principal of high school in Guangxi.

The researcher provided that there are 5 aspects and 40 measures to enhance the strategy of information leadership of Guangxi high school principals. There are 5 measures to promote vision, 12 measures to enhance promoting leader characteristics, 8 measures to develop persistent environmental factors, 8 measures to improve promoting teamwork ability and 7 measures to enhance data-driven

decision support. In the literature review, the author found that there are many factors affecting information technology leadership.

Promoting vision (Zhang Yan, 2019, p.72) Research on Strategies and Methods for Enhancing Vision Planning - Taking the Education Industry as an Example, there is a specialized discussion on enhancing vision planning. (Zhong Xuelian, 2020,p.44) Research on the Path of Enhancing Information Leadership of S Primary School Management Team with Smart Education as the Vision. In the study of enhancing information leadership of S Primary School Management Team, it is necessary to integrate smart education as the vision. (Yang Xin, 2016, p.47) Research on Strategies and Development Plans for Enhancing Information Teaching Leadership of Primary School Principals discusses development planning in the study of strategies for enhancing information teaching leadership of primary school principals. (Qi Xiaohui, 2022, p.52) Research on the Application of Vision Planning in Educational Leadership Enhancement discusses the enhancement of vision planning. The research conclusion is that vision planning plays a crucial role in enhancing information leadership. A clear and forward-looking vision can provide direction for the school management team, stimulate the enthusiasm and innovative spirit of team members. Under the vision of smart education, the management team of S Elementary School needs to constantly update their educational concepts, deeply integrate information technology with education and teaching, in order to achieve the development goals of educational information. Secondly, the improvement of information leadership requires support and cooperation from multiple aspects. In addition to technical training and learning, it is also necessary to focus on cultivating teamwork skills, updating educational concepts, and improving management mechanisms. The management team of S Elementary School should improve the information technology application ability of team members through regular training and communication, while strengthening cooperation and communication with other schools to jointly promote the process of educational information. Finally, this study emphasizes the importance of the information leadership enhancement path with the vision of smart education. In the process of realizing the vision, it is necessary to pay atention to the professional growth of teachers, the learning needs of students,

and the development plan of the school. By developing practical implementation plans and evaluation mechanisms, we ensure that the realization of our vision is complementary to the improvement of the quality of school education. In summary, this study believes that enhancing the information leadership of primary school management teams is the key to promoting the development of educational infoumation in the context of smart education. By clarifying vision planning, strengthening team building, and improving management mechanisms, measures can effectively enhance the information leadership of the S Elementary School management team, thereby promoting the overall development of school education.

Enhancing leader characteristics, The role and support of leadership traits in enhancing organizational effectiveness in promoting leadership characteristics, technological elements, innovation, etc. (Wang Shuhua, 2021, p.31) are supported by research. (Sun Jingya, 2022, p.14) The study on environmental influencing factors and optimization strategies for leadership development of rural primary and secondary school principals in Hebei Province points out the influencing factors and improvement strategies for leadership development of rural primary and secondary school principals in Hebei Province. The study on the evolution and improvement strategies of principal leadership in the process of school infoumation development (Weng Jialong, 2014, p.61) discusses the improvement of leadership traits and school development plans. The following conclusion can be drawn: leadership traits play a key role in enhancing organizational effectiveness and promoting school development. Especially in the field of education, the leadership traits of principals not only affect their own leadership effectiveness, but also directly relate to the overall development of the school and the professional growth of teachers. Improving self-learning awareness, moral cultivation, and transforming leadership concepts are important ways to enhance leadership. Meanwhile, in the rural primary and secondary school environment, the enhancement of principal leadership also needs to consider specific factors such as geography, resources, and teaching staff. In addition, with the development of school infoumation, principals need to constantly update their concepts, master modern information technology to adapt to the trend of educational infoumation, and lead schools to achieve better development in the

process of educational infoumation through leadership enhancement. Therefore, cultivating and enhancing the leadership qualities of principals is an important link in promoting the overall progress and development of schools.

Developing environmental factors, (Sun Jingya, 2022, p.45) A study on the environmental impact factors and optimization strategies for the development of leadership among rural primary and secondary school principals in Hebei Province pointed out the influencing factors and improvement strategies for the leadership of rural primary and secondary school principals in Hebei Province. In order to build a good campus environment, (Yang Xin, 2016, p.19) a study on the improvement of teaching leadership by primary school principals in an information environment and the construction of campus environment pointed out the strengthening of the information environment. (Huang Fuhui, 2013, p.30) A study on the impact of the improvement of principal's information leadership on personal active learning and school environment construction pointed out that the improvement of principal's information leadership has a significant impact on principal's personal active learning and environment construction. (Lei Lihua et al., 2021, p.18) The evolution and improvement mode of principal information leadership in the era of educational infoumation 2.0, with a focus on environmental construction. The research conclusion shows that environmental factors promoting development have a significant impact on enhancing principal leadership. Building a good campus environment is 1 of the important factors in enhancing the leadership of principals in rural primary and secondary schools in Hebei Province, including optimizing the school's physical environment, cultural environment, and interpersonal relationship environment. Meanwhile, with the advancement of educational infoumation, strengthening the construction of an information-based environment has become a key factor in enhancing the leadership of principals. Information has not only changed teaching methods, but also provided principals with more leadership tools and methods, thus requiring them to possess higher levels of information leadership. In addition, the improvement of the principal's information leadership is closely related to their personal proactive learning, and a supportive and motivating school environment can greatly promote this proactive learning. Therefore, in order to enhance the leadership

of principals, it is necessary to pay atention to and optimize the development environment of schools, especially the information technology environment, in order to stimulate principals' active learning willingness and improve their leadership. In the context of the education infoumation 2.0 era, this environmental construction has become an indispensable part. Overall, promoting environmental factors is an important way to enhance the leadership of principals and requires sufficient atention and investment.

Developing teamwork ability, In the research on the current situation, interactive communication platform construction, and improvement strategies of informatio leadership of primary and secondary school principals in Hanzhong City, Zhang Yan (2019, p.9) discussed the establishment of interactive communication platforms. In the research on the role of communication, cooperation, and communication skills in improving information teaching leadership of primary school principals, Yang Xin (2016, p.30) discussed the expansion of communication, cooperation, and communication skills. (Zhu Hua, 2015, p.7) conducted a study on the development status of information leadership and the improvement of information communication and coordination abilities of primary and secondary school principals. The study investigated the development status and improvement strategies of information leadership among primary and secondary school principals, and discussed information communication and coordination. Research conclusion: Developing teamwork skills is crucial for enhancing the information leadership of primary and secondary school principals. By establishing an interactive communication platform, principals can more effectively share information, exchange experiences, and discuss issues. This not only helps to enhance personal information leadership, but also promotes the development of the entire school team. At the same time, expanding communication and cooperation, and enhancing communication skills are also key links in improving the principal's information technology leadership. By strengthening communication and cooperation with other schools or educational institutions, principals can learn from advanced experiences, broaden their horizons, and enhance their own leadership skills. In addition, the improvement of information communication and coordination capabilities cannot be ignored, especially in the

context of educational infoumation. Efficient information communication and coordination can ensure timely transmission and accurate understanding of information, thereby improving the management efficiency and teaching quality of schools. Therefore, primary and secondary school principals should focus on developing teamwork skills, continuously improving their information technology leadership by establishing interactive communication platforms and enhancing communication and coordination abilities.

Elevate data-driven decision-making support, (Zheng Luhong, 2020, p.21) The construction and cultivation path of school information leadership from the perspective of smart campus discusses the construction and cultivation path of school information leadership from the perspective of smart campus, as well as the evaluation ability. (Dai Ruihua, 2019, p.41) discussed the evaluation of principal information governance capability in terms of connotation, core elements, and improvement strategies. (Song Chenfei, 2016, p.25) There is a certain gap in the research on the current situation and improvement strategies of information leadership among primary school principals, as well as in the evaluation of information technology and the data-driven decision-making discussed in the current situation. However, there is a basic prototype of this aspect. The essence of data-driven approach is to evaluate and infer information data. With the development of the information society and the advancement of big data and digital transformation, there is an even greater need for data as a more scientific inference to support leadership decisions. With the continuous development of the information society, big data and digital transformation have become inevitable trends. In this context, the leadership of school infoumation is particularly important, and the ability to evaluate infoumation is even more crucial. The gradual deepening of research on school information leadership, from the construction of training paths to the exploration of specific abilities, reflects the continuous enhancement of data-driven decision support.Data driven decision support is essentially based on evaluating and inferring information data to provide more scientific decision-making basis. With the continuous development of big data technology, this decision-making method will become more precise and efficient. This article explores the construction and

cultivation path of school information leadership from the perspective of smart campus, emphasizing the importance of data in decision-making. it has already taken shape. In summary, with the development of the information society and the continuous advancement of big data technology, data-driven decision-making will play an increasingly important role in school information leadership. In order to enhance the ability of decision support, we need to continuously strengthen the construction and cultivation of information leadership, especially the ability of information evaluation, in order to more scientifically infer and support leadership decisions.

Part 3: To evaluate the suitability and feasibility of strategies for developing information leadership for principal of high school in Guangxi

Through the statistics of the suitability and feasibility data of the information leadership enhancement strategies of the principals in the high schools of Pangasinan, it is found that the information leadership enhancement strategies of the principals in the high schools of Pangasinan are at a high level of suitability and feasibility. Among them are also just above the medium level, judged by the standard deviation, the surface of which is more controversial and the recognition is controversial. This means that although the suitability and feasibility of the enhancement strategies are high overall, a few of them are also at the medium level, indicating that there are also more difficult factors in the enhancement strategies. Guangxi high school principals should work harder in this regard to compensate for their inadequacies and shortcomings. Only with such enhancement strategies, they can quickly enhance their promotion of their own information leadership.

Promoting Vision, The highest mean is sustainable and optimization education information in the medium and long term. Goals should not only have foresight, but also practicality and operability. With the development of the school and changes in the external environment, principals need to regularly review and adjust these goals to ensure they are always aligned with the overall strategy of the school (Harlinger & Heck, 2011, p57), in the field of information leadership: directions and strategies for future education. The highest feasibility mean is the ability of principals to outline the school's vision, set goals, and clarify the direction of progress.

The vision is the long-term goal of the school, and the striving goal is the short-term roadmap to achieve this vision. The principal needs to be able to clearly depict the future of the school and provide direction for the joint efforts of teachers and students. The medium and long-term goals of sustainable development and optimization of educational information. Goals should not only have foresight, but also practicality and operability. With the development of the school and changes in the external environment, principals need to regularly review and adjust these goals to ensure that they are always aligned with the overall strategy of the school (Duan Chunyu, 2020, p.42). The impact of principal information leadership and the promotion of sustainable development and optimization of educational infoumation in the medium and long term goals. Goals should not only have foresight, but also practicality and operability. With the development of the school and changes in the external environment, principals need to regularly review: there are discussions on medium and long-term goals based on empirical research perspectives. In modern educational management, the leadership of principals plays a crucial role in the development of schools. This article focuses on how to enhance the ability of principals to outline the school's vision, set goals, and clarify the direction of progress. The school's vision, as its long-term goal, provides a common pursuit and ideal for all teachers and students in the school. And the goal of striving is a specific short-term roadmap to achieve this vision, which helps the school steadily move forward on the road to realizing the vision. As a leading figure in the school, the principal needs to have the ability to clearly depict the future of the school, in order to point out the direction for teachers and students to work together. In addition, the principal also needs to have the ability to efficiently execute the school's work plan. This requires the principal to develop a clear and comprehensive work plan to ensure that all school affairs can be carried out in an orderly manner. Meanwhile, the effectiveness and sustainability of the work plan are also important factors that cannot be ignored, as they directly affect the long-term stable development of the school. In summary, enhancing the abilities of principals has profound significance for promoting the development of schools and improving the quality of education. The principal should continuously learn and improve in order to better lead the school towards a brighter

future.

Enhancing Leader Characteristics, The highest mean of encourage principals to actively guide and motivate teachers to learn new technologies, cultivate teachers' technical literacy and innovation ability. (J. Murphy, 2016, p.57). The highest feasibility mean is the developmental aspect. In the process of promoting educational infoumation, principals should demonstrate firm determination and strong will to overcome difficulties and obstacles (Li Chaoping, 2015, p.25). (Wang Zhihui, 2015, p.18) Enhancing Principal Leadership and School Culture Development: Building a Positive Work Atmosphere and Efficient Execution Mechanism. It is pointed out that as the leader of the school, the principal first needs to deeply understand and identify with the core values and cultural connotations of the school, internalize the school culture into the daily behavior of teachers and students through their own words, actions, and decisions, and form a unique school spirit. At the same time, the principal should actively create a positive and uplifting working atmosphere, encourage teachers and students to innovate and challenge themselves, and make the school a vibrant and creative learning and working environment. The principal should become a role model for teachers and students, investing in the management and development of the school with a high sense of responsibility and mission, continuously improving their professional competence and management ability, and laying a solid foundation for the long-term development of the school. The importance of establishing an effective principal execution mechanism has been emphasized to ensure the smooth implementation of school policies at all levels. This requires the principal not only to have strategic vision and planning ability, but also to have strong execution and coordination ability, to mobilize the enthusiasm of all teachers and students in the school, and jointly promote the achievement of the school's development goals. In summary, the aim of "Building a Positive Work Atmosphere and Efficient Execution Mechanism" is to explore how to enhance the leadership of principals, promote the prosperity and development of school culture, optimize the work atmosphere, and ultimately promote the overall progress and long-term development of the school.

Developing Environmental Factors, the highest mean of encourage principals to actively encourage teachers to propose innovative ideas and suggestions, and to stimulate team wisdom. The highest feasibility mean also encourages principals to actively encourage teachers to put forward innovative ideas and suggestions, and stimulate team wisdom. (Sun Zhenxiang et al., 2014, p.42). Principal Leadership and Teacher Professional Development: Promoting Educational Infoumation and Team Identity (Zhang Wei, 2021, p.53) focuses on the role of principals in promoting teacher professional development, particularly in providing technical support and learning resources. (Lu Yan, 2018) He emphasized that principals should become key figures in promoting educational infoumation, by providing necessary technical training and learning resources for teachers, helping them master modern educational technology, and improving teaching quality and effectiveness. Explored how to enhance the principal's sense of identity and confidence in team education infoumation. He believes that principals need to have a deep understanding of the importance and potential of educational infoumation, actively advocate and support innovation and application of educational technology in schools, so as to stimulate teachers' enthusiasm and confidence in educational infoumation, and jointly promote the modernization process of school education. Special emphasis is placed on the educational role of the environment.

Developing Teamwork ability, The highest mean is to develop the principal to expand the scope of cooperation, which is not limited to resource sharing, but also includes project cooperation, scientific research cooperation, etc., promoting the common progress of the school and society. (Cao Anqi, 2016, p.36). The highest feasible mean is to promote the establishment of an effective feedback mechanism between principals and teachers, ensuring the two-way flow of information. (Zhang Yihua, 2018, p.61). Principal leadership and school innovation ecology: building an open communication culture and external cooperation mechanism (Li Hua, 2022, p.52) points out the key role of principal leadership in the construction of school innovation ecology. He emphasized that as the leader of the school, the principal should actively encourage a culture of open communication, create a vibrant and creative environment for the school by listening to different opinions and inspiring

team innovation spirit. This open and inclusive atmosphere helps to stimulate the innovative potential of teachers and students, and promote continuous innovation in educational concepts, teaching methods, and management models in schools. The important role of principal leadership in the construction of school innovation ecology. By fostering a culture of open communication and actively seeking external cooperation, principals can bring more innovative opportunities and development momentum to schools, driving them forward in the field of education. This study has important practical guidance significance for enhancing principal leadership and promoting innovative development in schools.

Elevate Data Driven Decision Support, The highest mean is to elevate the principal's confidence in achieving the expected results of data decision-making. The principal should make decisions based on data and analysis, and have confidence that data-driven decisions will bring positive results, while making adjustments and optimizations based on actual results. Enhance the data literacy of the principal management team. The principal should cultivate the team's data awareness and analytical skills, so that team members can understand and apply data-driven decision-making methods (Ahmed Elragal, Nada Elgendy,2024, p.48). The highest feasible mean is to enhance the principal's continuous optimization of data-driven decision-making processes. The principal should continuously optimize the decision-making process and improve the mechanism and methods of data-driven decision-making based on data analysis and actual results. (Zhu Xuemei, 2023, p.69). The principal plays a crucial role in mastering and utilizing data tools to evaluate students' personal development. They need to use data tools to deeply analyze students' progress and needs in academics, skills, and interests, in order to more accurately understand each student's uniqueness and development potential. Through this personalized data analysis, principals can provide students with more precise and targeted educational support, thereby promoting their comprehensive development and personalized growth.

Recommendations

Implications The research results indicate that in the strategy of enhancing the information leadership of high school principals in Guangxi, the overall mean value of suitablity and feasibility in the 5 dimensions of evaluation research is the lowest, indicating that the content is difficult or not given enough atention. Therefore, the key focus and atention to improving the information leadership of high school principals in Guangxi are as follows:

Promoting vision: Foster forward-thinking perspectives among principals, emphasizing the importance of sustainable development and encouraging visionary planning. Additionally, the higher-level administrative management department should appropriately enhance the autonomy of principals to facilitate innovative decision-making.

Enhancing leadership traits: Strengthen the training of principals in psychology and management techniques to cultivate effective leadership traits. Simultaneously, develop comprehensive assessment criteria to identify and select principals who exhibit strong leadership potential and are suited for the role.

Developing environmental factors: Provide diverse opportunities for principals to integrate theoretical knowledge with practical experience, enriching their training and fostering a conducive environment for professional growth. This includes exposure to real-world scenarios and case studies.

Developing teamwork ability: Encourage the establishment of inclusive and open systems within schools, promoting collaboration and teamwork among principals and their staff. Implement incentive mechanisms that reward team achievements, fostering a culture of collective success.

Elevate data-driven decision support: Strengthen the use of data-driven training and incentive measures for principals, empowering them to make informed decisions based on analytical evidence. This includes providing access to relevant data, training in data analysis, and recognizing data-driven achievements.

Future Researches

1. To promote principals' understanding and tolerance of school culture, we can organize cultural immersion programs and workshops. This will foster open communication and interaction among school teams, creating a harmonious environment. Principals leading by example, embracing diversity, will encourage mutual respect and understanding, strengthening the school community's cohesion.

2. Utilizing information technology can alleviate concerns in school collaborations, enhancing mutual understanding and trust. Transparent communication platforms and resource sharing foster seamless cooperation, nurturing a positive climate where partners feel valued and supported.

3. Strengthening national policies on principal training is crucial, especially in keeping pace with the evolution from information technology to digitalization. This includes integrating digital literacy, data analytics, and online learning management into training content.

4. Data-driven decision support benefits schools, principals, teachers, and students. It identifies improvement areas, tailors teaching strategies, and allocates resources efficiently. Principals make informed choices, teachers receive personalized development, and students experience improved learning outcomes, fostering a culture of continuous improvement and excellence.

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Appendix

Appendix A

List of Specialists and Letters of Specialists Invitation for IOC Verification

List of Specialists for IOC Verification

No	Expert	position	Work place
1	Dr Li Linbo,	Principal	Affiliated Middle School of Guangxi Normal University
2	Dr Mo Zhigong	Principal	Baise Senior High School
3	Dr Long Yun	Director	Nanning Modern Education Technology Center
4	Dr Tan Jiao Lian,	Professor	Guangxi Normal University
5	Dr Wu Lan'an	Professor	Nanning Normal University

Ref.No. MHESI 0643.14/748

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

22 January 2024

RE: Invitation to validate research instrument

Dear Li Linbo, Principal, Affiliated Middle School of Guangxi Normal University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

Bansomdejchaopraya Rajabhat University
Tel.+662-473-7000
www.bsru.ac.th
E-mail: grad@bsru.ac.th

Ref.No. MHESI 0643.14/749

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

22 January 2024

RE: Invitation to validate research instrument

Dear Mo Zhigong Principal ,Baise Senior High School

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

Bansomdejchaopraya Rajabhat University
Tel.+662-473-7000
www.bsru.ac.th
E-mail: grad@bsru.ac.th

Ref.No. MHESI 0643.14/750

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

22 January 2024

RE: Invitation to validate research instrument

Dear Director Long Yun, Nanning Modern Education Technology Center

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

Bansomdejchaopraya Rajabhat University
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E-mail: grad@bsru.ac.t

Ref.No. MHESI 0643.14/751

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

22 January 2024

RE: Invitation to validate research instrument

Dear Professor Dr. Tan Jiao Lian, Guangxi Normal University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

Bansomdejchaopraya Rajabhat University
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Ref.No. MHESI 0643.14/752

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

22 January 2024

RE: Invitation to validate research instrument

Dear Professor Dr. Wu Lan'an, Nanning Normal University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

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Appendix B

Official Letter

Ref.No. MHESI 0643.14/754

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

22 January 2024

RE: Request for Data Collection

Dear Sir or Madam

Mr. He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research. List of universities and colleges according to the attached document.

With your expertise, we would like to request to collect the data to be used in the research. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate School

Bansomdejchaopraya Rajabhat University
Tel.+662-473-7000
www.bsru.ac.th
E-mail: grad@bsru.ac.th

No	Universities and Colleges
1.	Nanning No.2 Middle School
2.	Nanning No.3 Middle School
3.	Wuming Senior High School in Wuming District, Nanning City
4.	Hengxian Middle School
5.	Nanning No.36 Middle School
6.	Nanning Peihong Ethnic Middle School
7.	Nanning No.8 Middle School
8.	Nanning Yongning Senior High School
9.	Binyang Middle School
10.	Nanning No.14 Middle School
11.	Nanning Foreign Language School
12.	Nanning No.33 Middle School
13.	Nanning No.1 Middle School
14.	Binyang County Senior High School
15.	Nanning Yinghua School
16.	Shanglin County Middle School
17.	Wuming Middle School in Wuming District, Nanning City
18.	Wuming Middle School in Wuming District, Nanning City
19.	Long'an County Long'an Middle School
20.	Hengxian Second Senior High School
21.	Nanning No.26 Middle School
22.	Guangxi Ethnic Senior High School
23.	Guangxi Ethnic Senior High School
24.	Guangxi Hope High School
25.	Binyang Kaizhi Middle School
26.	Nanning No.4 Middle School
27.	Liuzhou Senior High School
28.	Liuzhou Senior High School
29.	Liuzhou Tieyi Middle School
30.	Liuzhou Tie'er Middle School
31.	Liuzhou No.2 Middle School
32.	Liujiang Middle School
33.	Liucheng County Middle School
34.	Liuzhou No.3 Middle School
35.	Liuzhou Gangyi Middle School
36.	Luzhai County Luzhai Middle School
37.	Rongshui Miao Autonomous County Middle School
38.	Rong'an County Senior High School
39.	Sanjiang Dong Autonomous County Senior High School
40.	Liuzhou Ethnic High School
41.	Liuzhou No.6 Middle School

No	Universities and Colleges
42.	Liuzhou Foreign Language Senior High School
43.	Guilin Middle School in Guilin City
44.	Guilin No.18 Middle School
45.	Guangxi Normal University Affiliated Middle School
46.	Gongcheng Middle School in Gongcheng Yao Autonomous County
47.	Lingchuan County Lingchuan Middle School
48.	Xing'an County Xing'an Middle School
49.	Quanzhou County Quanzhou Senior High School
50.	Yangshuo County Yangshuo Middle School
51.	Pingle County Pingle Middle School
52.	Lipu County Lipu Middle School
53.	Guangxi Normal University Affiliated Foreign Language School
54.	Lingui District Lingui Middle School
55.	Guanyang County Senior High School
56.	Yongfu Middle School in Yongfu County
57.	Longsheng Middle School in Longsheng Autonomous County
58.	Resource County Resource Middle School
59.	Guilin Yixian Middle School
60.	Guilin Zhongshan Middle School
61.	Guilin No.9 Middle School
62.	Guilin No.1 Middle School
63.	Guilin Experimental High School Affiliated to Capital Normal University
64.	Wuzhou Senior High School
65.	Cenxi Middle School in Cenxi City
66.	Cangwu Middle School
67.	Wuzhou No.1 Middle School
68.	Tengxian Middle School
69.	Mengshan Middle School in Mengshan County
70.	Cenxi No.2 Middle School
71.	Guangxi Tengxian No.1 Middle School
72.	Beihai Middle School in Beihai City
73.	Hepu Lianzhou Middle School
74.	Beihai No.7 Middle School
75.	Hepu County No.1 Middle School
76.	Fangchenggang Experimental Senior High School
77.	Fangchenggang Senior High School
78.	Dongxing Middle School in Dongxing City
79.	Shangsi County Shangsi Middle School
80.	Lingshan Middle School in Lingshan County
81.	Qinzhou No.1 Middle School
82.	Qinzhou No.2 Middle School

No	Universities and Colleges
83.	Pubei Middle School
84.	Xinzhou Middle School in Lingshan County
85.	Qinzhou No.3 Middle School
86.	Guigang Senior High School
87.	Jiangnan Middle School in Guigang City
88.	Xunzhou Senior High School in Guiping City
89.	Pingnan County Middle School
90.	Guiping No.1 Middle School
91.	Guigang Dakai Senior High School
92.	Qintang District Qintang Senior High School
93.	Guiping No.3 Middle School
94.	Guigang Gangnan Middle School
95.	Guigang Ethnic Middle School
96.	Guigang Gangbei District Senior High School
97.	Gongzhou Middle School in Pingnan County
98.	Guigang Xinjiangnan Experimental Middle School
99.	Yulin Senior High School
100.	Yulin No.1 Middle School
101.	Bobai County Middle School in Guangxi
102.	Rongxian Senior High School
103.	Beiliu Senior High School
104.	Luchuan County Middle School
105.	Xingye County Senior High School
106.	Wangli Middle School in Bobai County, Guangxi
107.	Rongxian Yangmei Middle School
108.	Yulin Experimental High School
109.	Rongxian Middle School
110.	Baise High School
111.	Baise Qifu High School
112.	Tianyang High School in Guangxi Zhuang Autonomous Region
113.	Pingguo Senior High School
114.	Baise College Affiliated Middle School
115.	Jingxi Middle School in Jingxi City
116.	Tiandong Middle School
117.	Tianlin County Senior High School
118.	Debao County Debao High School
119.	Longlin Middle School in Longlin Autonomous County
120.	Lingyun County Middle School
121.	Leye High School
122.	Napo Middle School
123.	Xilin Ethnic Senior High School

No	Universities and Colleges
125.	Zhaoping Middle School
126.	Hezhou No.1 Senior High School
127.	Zhongshan Middle School
128.	Fuchuan Yao Autonomous County Senior High School
129.	Hezhou No.2 Senior High School
130.	Hezhou Fourth Senior High School
131.	Hechi Senior High School
132.	Du'an Yao Autonomous County Senior High School
133.	Dahua Yao Autonomous County Senior High School
134.	Yizhou District No.1 Middle School in Hechi City
135.	Luocheng Mulao Autonomous County Senior High School
136.	Nandan County Senior High School
137.	Huanjiang Maonan Autonomous County Senior High School
138.	Hechi Second Senior High School
139.	Bama Yao Autonomous County Senior High School
140.	Fengshan County Senior High School
141.	Donglan County Senior High School
142.	Tian'e County Senior High School
143.	Yizhou District Senior High School in Hechi City
144.	Liuzhou Ethnic Senior High School
145.	Laibin No.1 Middle School
146.	Xiangzhou County Middle School
147.	Wuxuan County Middle School
148.	Xincheng County Senior High School
149.	Jinxiu Yao Autonomous County Ethnic High School
150.	Heshan Senior High School
151.	Laibin Senior High School
152.	Fushui County Fushui Middle School
153.	Chongzuo Senior High School
154.	Ningming County Ningming Middle School
155.	Tiandeng County Senior High School
156.	Longzhou County Senior High School
157.	Daxin County Daxin Middle School
158.	Pingxiang Senior High School
159.	Guangxi Ethnic Normal University Affiliated Middle School

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22 January 2024

RE: Invitation to Evaluate the Strategies

Dear Professor Ou Qizhong, Nanning Normal University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research.

With your expertise, we would like to ask your permission to evaluate the attached Strategies. Would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
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22 January 2024

RE: Invitation to Evaluate the Strategies

Dear Professor Huang Jingwen, Guangxi University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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22 January 2024

RE: Invitation to Evaluate the Strategies

Dear Professor Yuan Lei, Guangxi Normal University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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RE: Invitation to Evaluate the Strategies

Dear Professor Shen Shusheng, Nanjing Normal University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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RE: Invitation to Evaluate the Strategies

Dear Professor Wang Yi, Guizhou Normal University

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22 January 2024

RE: Invitation to Evaluate the Strategies

Dear Professor Yuan Tongqing, Anhui Normal University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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22 January 2024

RE: Invitation to Evaluate the Strategies

Dear Professor Yu Liang, Southwest University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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RE: Invitation to Evaluate the Strategies

Dear Professor Wei Fei, East China Normal University

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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22 January 2024

RE: Invitation to Evaluate the Strategies

Dear Professor Liang Junmin, Principal, Liuzhou Tiyi Middle School

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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22 January 2024

RE: Invitation to Evaluate the Strategies

Dear Mr.Qin Xiaogang, Director of Guilin E-learning Station

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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RE: Invitation to Evaluate the Strategies

Dear Mrs.Zhang Jian, Director of Guilin E-learning Station

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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RE: Invitation to Evaluate the Strategies

Dear Principal Li Xuefeng, Daan High School, Pingnan County, Guigang City

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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RE: Invitation to Evaluate the Strategies

Dear Principal Huang Heqing, Nanning Third Middle School

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22 January 2024

RE: Invitation to Evaluate the Strategies

Dear Principal Qin Weidong, Liuzhou No.2 Middle School

Mr.He Jian is a graduate student in Doctor of Philosophy Program in Educational Administration of Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Strategies for Developing Information Leadership for Principals of High School in Guangxi"

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Appendix C

Research Instrument

Research Questionnaire

Title: Strategies for Developing Information Leadership for principal of high School in Guangxi

Directions:

1. This is an academic research questionnaire to understand the current status of information leadership of high school principals in Guangxi, and to provide reference for the development strategy of information leadership of high school principals in Guangxi.

2. This questionnaire is anonymous. All information is for academic statistical analysis only. There is no right or wrong criterion, and individual processing and analysis will not be conducted. The information is absolutely confidential. Please feel free to fill in the answers. Your opinion is very valuable. Please read the instructions carefully and then answer the questions 1 by 1 according to your actual observations and feelings in high school. Once again, thank you for your enthusiastic help and express my deepest gratitude!

Part 1: General information of the respondents.

Instructions: Please write a mark ✓in □ that corresponds to the actual situation about yourself.

Questions
1. sex ❒ Male ❒ Female
2. highest degree ❒ (1) Technical secondary school (high school) ❒ (2) College ❒ (3) Undergraduate ❒ (4) Master degree and above
3. Your age is: ❒(1) 30 years old and below ❒(2) 31 ~ 40 years old ❒(3) 34 ~ 50 years old ❒(4) 51 years old and above

Questions
4. Length of service as principal: ❒ (1)5 years and below ❒ (2)6 ~ 15 years ❒ (3)16 ~ 25 years ❒ (4)26 years and above
5. Major studied
6. Where in Guangxi is the school located? ❒ (1)North ❒ (2)Middle part ❒ (3)Southern ❒ (4)Eastern ❒ (5)Western
7. The area where the school is located is: ❒ (1)Urban area ❒ (2) County seat ❒ (3)2nships

Part 2: Questionnaire on the information leadership of high school principals in Guangxi

The purpose of this section is to find out where you currently stand with your high school principal's information leadership. Please select and fill in the numerical choices that match how you feel: please select 5 for very compliant, 4 for compliant, 3 for mean, 2 for non-compliant, and 1 for very non-compliant. Please answer each question individually and do not omit anything. Thank you.

Information leadership of high school principals in Guangxi	5	4	3	2	1
1. Vision					
1.Principal formulated a long term , medium term, and sort-term infoumation vision plan for the school’s development.					
2. Principal establishes an information management system					
3. Principal has plans for the construction of information infrastructure					
4. Principal has a plan for the use of information funds					
5. Principal explains the school’s information vision plan to teachers and students on different occasions					
6. Principal can complete the planned plan in an orderly manner.					

Information leadership of high school principals in Guangxi	5	4	3	2	1
7. Principal will make adjustments to the information vision plan midway according to the actual situation.					
8. Principal will often describe the school's aspirational vision, goals and direction.					
9. Principal formulates the management team's specific division of labor for information goals.					
10. Principal understands the current status of school infoumation development and conducts phased evaluations of the plan.					
11. Principal plans the security and confidentiality of the school network					
2. Leader characteristics					
1. Principal can provide suggestions for the development of teachers and allow them to develop their strengths.					
2. Principal can patiently listen to teachers' questions and answer their questions.					
3. Principal is not a person who worries easily and has many friends.					
4. Principal is open-minded and has a strong sense of innovation.					
5. Principal loves his job and has a strong sense of professionalism and enterprising spirit.					
6. Principal likes to explore and discover unknown things.					
7. Principal keeps learning to enrich and improve his abilities.					
8. Principal feels that he is better than most people.					
9. Principals sometimes use threats or flattery to persuade others to do what you want.					
10. Principal When faced with extreme pressure, there may be times when you feel as if you are about to collapse.					
11. Principal often feels energetic and full of energy.					

Information leadership of high school principals in Guangxi	5	4	3	2	1
12. Principal may be somewhat self-centered and not considerate of other people's feelings.					
13. Principal encounters setbacks, you feel discouraged and want to give up.					
3. Environmental factor					
1. Principal and the school carry out the construction of information-based teaching resources.					
2. Principal establishes an incentive mechanism for teachers to implement information-based classroom teaching.					
3. Principal adopts information management methods for school personnel, finance, and asset management.					
4. Principal's school has sufficient information equipment and network speed to satisfy teachers and students' teaching and learning.					
5. Principal and school teachers can skillfully use information technology to promote teaching and scientific research.					
6. Principal's campus environment is purified, beautified and civilized to a very high degree.					
7. Principal and school teachers actively participate in infoumation training and take the initiative to learn new technologies.					
8. Principal's teachers and students in the school are proficient in using information technology communication tools.					
9. Principal's school builds a new information-based learning environment to promote students' use of technology to support learning.					
10. Principal uses the campus network to promote the school					
11. Principal's school uses the campus network for academic affairs and teaching management					

Information leadership of high school principals in Guangxi	5	4	3	2	1
12. Principal's school uses the campus network to share teaching resources					
13. Principal The school has established a reward system for teachers' information-based teaching.					
14. Principals often participate in infoumation-related training					
4. Teamwork ability					
1. Principal will encourage teachers to express ideas that are different from others.					
2. Principal of the school will use the campus online meeting to make a special summary and reflection on the feedback of different opinions.					
3. Principal often communicates and discusses issues at work with teachers.					
4. Principal often coordinates work and conflicts between school departments/employees.					
5. Principal implements the people-oriented management concept everywhere.					
6. Principal cooperates and communicates with parents, the community and other entities outside the school.					
7. Principal's school has established a platform for teachers to participate equally and help each other learn.					
8. Principal communicates frequently with students to meet their learning needs.					
9. Principal can clearly express the need to communicate and exchange information					
10. Principal believes that information tools have a positive effect on team collaboration and communication.					
11. Principal's management team will discuss and resolve disputes together.					

Information leadership of high school principals in Guangxi	5	4	3	2	1
12. Principals and school teachers voluntarily share their experiences with each other.					
5. Data-driven decision support					
1. Principal makes decisions on some matters based on the data analysis collected by the school.					
2. Principals rely on data analysis in their decision-making processes.					
3. Principal conducts statistical analysis on the school's information-based teaching					
4. Principal will base the school's digital resource construction plan on data.					
5. Principal conducts data analysis and evaluation on the school's use of financial funds.					
6. Principal will use relevant data as a reference when evaluating school development.					
7. Principal believes that data-based decision-making will achieve the desired results.					
8. Principal encourages the school to build a data culture system or method.					
9. Principal believes that data-driven decision-making is more scientific than subjective decision-making.					
10. Principals use data tools to evaluate teacher performance					
11. Principals use data tools to assess individual student development.					
12. Principal is convinced that data-driven decision-making can improve school efficiency.					
13. Principal has a high awareness of data security.					

Part 3: SWOT on the information leadership of high school principals in Guangxi

Please complete each according to the principal's informational leadership development, superiority among its competitors, weaknesses among its competitors, opportunities that can be developed and utilized in certain environments, possible threats in certain environments that could diminish the impact of the school, etc.

1. Strengths

.....

.....

2. Weaknesses

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.....

3. Opportunities

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.....

4. Threats

.....

.....

Focus Group Discussion

Research Title: Strategies for Developing Information Leadership for principal of high School in Guangxi

Part 1: List of Focus Group Discussion

expert	Education background (year)	Discussion Date, time	High school	Leader experience (year)
expert 1	Education: Bachelor's degree Specialization: Educational administration Work experience:20	February 4, 2024, 10:00 am GMT +8	Nanning No.2 Middle School	13
Expert 2	Education: Bachelor's degree Specialization: Educational administration Work experience:30	February 4, 2024, 10:00 am GMT +8	Liuzhou Senior High School	15
Expert 3	Education: Bachelor's degree Specialization: Educational administration Work experience:22	February 4, 2024, 10:00 am GMT +8	Guilin Middle School	8
Expert 4	Education: Bachelor's degree Specialization: Educational administration Work experience:16	February 4, 2024, 10:00 am GMT +8	Wuzhou Senior High School	7

expert	Education background (year)	Discussion Date, time	High school	Leader experience (year)
Expert 5	Education: Bachelor's degree Specialization: Educational administration Work experience:19	February 4, 2024, 10:00 am GMT +8	Fangchengang Experimental Senior High School	7
Expert 6	Education: Bachelor's degree Specialization: Educational administration Work experience:25	February 4, 2024, 10:00 am GMT +8	Beihai Middle School of Beihai City	8
Expert 7	Education: Bachelor's degree Specialization: Educational administration Work experience:34	February 4, 2024, 10:00 am GMT +8	Lingshan Middle School in Lingshan County	17
Expert 8	Education: Bachelor's degree Specialization: Educational administration Work experience:23	February 4, 2024, 10:00 am GMT +8	Guigang Jiangnan Middle School	7
Expert 9	Education: Bachelor's degree Specialization: Educational administration Work experience:26	February 4, 2024, 10:00 am GMT +8	Yulin Senior High School	11
Expert10	Education: Bachelor's degree	February 4, 2024, 10:00 am GMT +8	Baise Senior High School	15

expert	Education background (year)	Discussion Date, time	High school	Leader experience (year)
	Specialization: Educational administration Work experience:24			
Expert11	Education: Bachelor's degree Specialization: Educational administration Work experience:18	February 4, 2024, 10:00 am GMT +8	Zhongshan Middle School	5
Expert12	Education: Bachelor's degree Specialization: Educational administration Work experience:24	February 4, 2024, 10:00 am GMT +8	Hechi Yizhou Senior High School	8
Expert13	Education: Bachelor's degree Specialization: Educational administration Work experience:22	February 4, 2024, 10:00 am GMT +8	Liuzhou District Nationality Senior High School	5
Expert14	Education: Bachelor's degree Specialization: Educational administration Work experience:30	February 4, 2024, 10:00 am GMT +8	Chongzuo Senior High School	8

Part 2: Focus group discussion transcripts

Focus Group Discussion

Title: Strategies for Developing Information Leadership for principal of high School in Guangxi

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Instruction The purpose of this focus group discussion was to collect data on the strategies for developing the information leadership for principals of high school in Guangxi. This group discussion was divided into two parts:

Part 1 Questions about respondents' personal information

Part 2 Strategies for Developing Information Leadership for principal of high School in Guangxi

The data collected in this focus group discussion was used for research purposes only. It is a holistic analysis that has no impact or detriment to the departments or experts, but will be beneficial to Strategies for Developing Information Leadership for principal of high School in Guangxi. The researcher looks forward to your information in this focus group discussion. We would like to express our sincere thanks.

Thank you very much

He Jian

Ph.D. in Educational Administration

Date of recorded focus group discussion

Recorded from .....**o'clock to**..... **o'clock**

Recorded place.....

Part 1: Personal Information of Experts

Instruction This focus group discussion documents the information gained from the focus group discussion that will be beneficial to Strategies for Developing Information Leadership for principal of high School in Guangxi. Please provide your personal information according to the following section.

1. Name.....

2. Level of education..... Degree .

Program in .....

3. Work position .....

4. Work experience..... years

Part 2: The data collection on Strategies for developing information leadership for principals of high school in Guangxi

1. Vision

1) The principal is able to accomplish the developed plan in an orderly manner.

2) The principal will frequently describe the school's aspirational vision, goals, and direction.

3) Develop a plan for adequate funding for information technology in education

4) Increased training in information technology for administrators, teachers, and students.

5) The principal sets long-term goals for the modernization of education.

suggestion

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2. Leader Characteristics

1) Enhancement of the principal's dedication to his/her job

2) Principal's ability to listen patiently to teachers asking questions and answering their queries

3) Principal enhances the administrator's insight into national policies
4) Principal enhances teachers' active participation in learning IT positively
5) Principal enhances the principal's confidence in education information technology
6) Principal enhances the timeliness of the principal to formulate the national political fall
7) Enhancement of principals' willpower
Suggestion

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3. Environmental factors
1) Principal campus environment of purification, beautification, civilization is extremely high.
2) Principal school teachers actively participate in information technology training and take the
3) initiative to learn new technologies.
4) Enhance the ability of teachers of all subjects to integrate information technology and subjects
5) Increase the training of principals on the use of national and Guangxi wisdom platforms
6) Construct a platform for smart campus and smart education system
7) Strengthen the unified management of digital resources
8) Enhancing teachers' ability to use digital education resources rationally
9) Developing incentive mechanisms for education infoumation
Suggestion

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4. Teamwork ability
1) Enhance the principal's implementation of the people-oriented management concept.
2) Promote principals' frequent communication and discussion with teachers about problems in their work.
3) Increase the communication between principals and teachers to exchange visions of new technologies

4) Increase communication between the principal and teachers and students about the school's vision.

Suggestion

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5. Data-Driven Decision Support

1) Principals use data tools to assess individual student development.

2) Principal believes that data decisions will have the desired effect.

3) Principal makes decisions based on the analysis of data collected at the school.

4) Enhancement of data safety training for principals.

Suggestion

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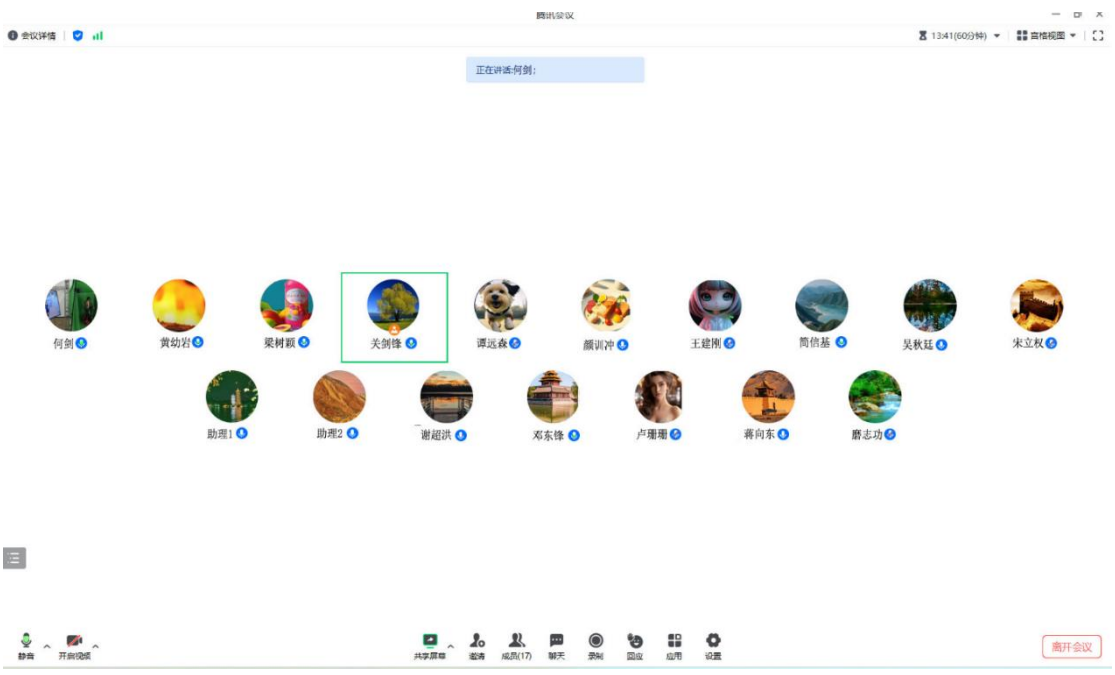

Figure Screenshot of Focus group discussion

Part 3: Summary of changes made by the focus group

Expert 1

Modification; Vision, (1) Enhance the principal's ability to efficiently implement the school's work plan. By developing a clear and comprehensive work plan, it ensures that school affairs are conducted in an orderly manner while focusing on the effectiveness and sustainability of the work.

Leadership Characteristics, (3) Principals should establish effective communication channels, actively listen to teachers' opinions and suggestions, and provide them with timely and accurate answers.

Teamwork skills, (3) Principals should regularly engage in open and h1st dialogues with teachers to discuss and solve challenges and problems at work, and encourage teachers to share experiences and innovative ideas.

Data-driven decision support, improve the principal's ability to collect, organize and analyze data, use data to provide a basis for decision-making, and improve the science and accuracy of decision-making.

Supplementary: data-driven decision support, principals improve the data literacy of their management teams: principals should develop their team's data awareness and analytical skills so that team members can understand and apply data-driven decision-making methods.

Expert 2

Modification; Vision, (5) Develop and optimize medium and long term goals for education informatics. Goals should not only be forward-looking, but also practical and actionable. As the school grows and the external environment changes, the principal needs to periodically review and adjust these goals to ensure that they remain aligned with the school's overall strategy.

Environmental factors, (6) Unified management of school digital resources. The principal needs to establish a sound digital resource management system to ensure rational use and effective management of digital resources to avoid waste and abuse of resources.

Teamwork ability, (1) Principals should strengthen the idea of "people-oriented management", truly care about the development and needs of teachers and

students, and create a harmonious and beneficial working and learning environment for them.

Data-driven decision-making support: (2) Enhance principals' confidence in data-driven decision-making to achieve the desired results: Principals should make decisions based on data and analysis results, and believe that data-driven decision-making can lead to positive results, while adjusting and optimizing according to the actual results.

Expert 3

Modifications; Vision, (2) Principals need to motivate and guide teachers to actively participate in training on new technologies, foster active learning and exploration, and enhance the technological proficiency of the teaching force.

Leader Characteristics, (6) Principals provide technology training and learning resources for teachers to promote professional development.

Data-driven decision support, (4) Raise principals' awareness of data security: Principals need to pay atention to data security and privacy protection, ensure compliant use and storage of data, and avoid data leakage and misuse.

Supplementary: Leader Characteristics, (11) Principals should demonstrate strong determination and strong willpower to overcome difficulties and obstacles in the process of promoting education information.

Teamwork ability, principals expand the scope of cooperation, cooperation is not limited to resource sharing, but also project cooperation, research cooperation, etc., to promote the common progress of the school and society.

Expert 4

Modification; Vision, (4) Enhance the competence of all teachers and students in information technology. This includes providing systematic IT training for administrators, teachers, and students to enable them to make full use of IT to enhance the quality of teaching and learning, as well as to optimize the school's management processes.

Leader Characteristics, (4) Principals actively encourage teachers to come up with innovative ideas and suggestions to stimulate team wisdom.

Environmental factors, (3) Enhance teachers' ability to integrate information technology with their subjects. Teachers of all subjects should have the ability to effectively integrate information technology with subject teaching and be able to use information technology tools to improve the quality and effectiveness of teaching.

Teamwork Ability, (2) The principal encourages an open communication culture, listens to different opinions, and stimulates team innovation.

Data-driven decision support, (3) The principal enhances the ability to collect, organize and analyze data, use data to inform decision-making, and improve the science and accuracy of decision-making.

Data-driven decision-making support, (5) Establish a support mechanism for data-driven decision-making: principals need to establish a comprehensive data collection, analysis and reporting system to ensure the accuracy and timeliness of data and provide strong support for decision-making.

Expert 5

Modification; Vision, (3) Develop a reasonable funding budget for education information. Funding is an important guarantee to promote the process of education information, and principals need to ensure that there is sufficient funding, while rationally allocating it to avoid waste and adjusting the budget in a timely manner according to the actual situation of the school.

Environmental factors, (3) Principals need to cultivate the spirit of active learning and active exploration among teachers. (5) Constructing a smart campus and smart education system platform. The principal needs to comprehensively plan and implement the construction of the school's smart campus, establish a perfect education information platform, and provide rich digital education resources and services.

Teamwork ability, (2) The principal encourages to stimulate the team's innovative spirit.

Data-driven decision support, (1) Improve principals' ability to use data tools to assess students' individual development: Principals need to master the use of data tools to analyze individual students' progress and needs in terms of academics, skills,

and interests in order to provide students with more personalized educational support

Addendum: Leader Characteristics, Principals should ensure timely and accurate implementation of state policies to improve the timeliness of school work.

Expert 6

MODIFY; VISION, (2) Elevates the principal's ability to clearly articulate a vision for the future of the school and to point the way for teachers and students to work together.

Leader Characteristics, (5) The principal should actively guide and motivate teachers to take the initiative to learn new technologies and develop their technological literacy and creativity.

Environmental factors, (4) Principals need to increase their efforts in interpreting relevant policy documents in order to better guide the school's educational information efforts.

Teamwork skills, (4) Principals establish an effective feedback mechanism to ensure a two-way flow of information.

Data-driven decision support, ((4) Improve the principal's ability to ensure compliant use and storage of data to avoid data leakage and misuse.

Expert 7

Modification; Vision, (4) Principals mention enabling them to make full use of information technology to enhance the quality of teaching and learning, as well as to optimize the management process of the school.

Environmental Factors, (7) Enhance principals' training and guidance on teachers' ability to use digital educational resources.

Data-driven decision support, (1) to enhance principals' ability to master the use of data tools to analyze individual students in terms of academics, skills, and interests.

Supplementary: leader characteristics to improve the principal's identification and confidence in the team's educational information. The principal encourages every1 to work together to deal with difficult courage.

Teamwork skills, the principal establishes an interoperability model for information.

Expert 8

Modification; Leader characteristics, (4) Improve the principal's ability to stimulate the wisdom of the team.

Environmental factors, (1) The principal creates a favorable school environment. Principals need to pay atention to the purification, beautification and civilization of the campus environment to create a positive, healthy and harmonious campus atmosphere and provide good conditions for teachers and students to learn and work.

(6) Principals need to establish a sound digital resource management system.

Teamwork skills, (4) Principals establish an effective feedback mechanism to ensure a two-way flow of information.

Supplementary: Data-driven decision support, principals continuously optimize the process of data-driven decision-making: principals should continuously optimize the decision-making process based on data analysis and actual results, and continuously improve the mechanism and methods of data-driven decision-making.

Expert 9

Modification: Teamwork ability: (1) The principal should strengthen the idea of "people-oriented management", truly care about the development and needs of teachers and students, and create a harmonious and beneficial working and learning environment for them.

Data-driven decision support, (2) empowering principals to make decisions based on data and analytics.

Complementary: Leader Characteristics, the principal ensures the smooth implementation of policies at the school level.

Expert 10

Modification; Vision, (1) Enhance the principal's ability to work through the development of a clear and comprehensive work plan.

Leader Characteristics, (1) The principal should demonstrate a high level of professionalism and dedication to the management and development of the school.

Environmental factors, (2) Principals need to motivate and guide teachers to actively participate in training on new technologies, cultivate the spirit of active learning and exploration, and enhance the technological level of the teaching force.

Complementary: Teamwork skills, Principals ensure that the voices of administrators and teachers are heard and included in the decision-making process.

Data-driven decision support, improving the ability of the principal's management team to understand and utilize data-driven decision-making methods.

Expert 11

Modifications; Vision, (3) The principal ensures that adequate funding is committed and budgets are adjusted in a timely manner based on school realities.

Environmental Factors, (7) The principal ensures that teachers are able to utilize digital educational resources appropriately and effectively.

Teamwork skills, (4) The principal establishes an effective feedback mechanism to ensure a two-way flow of information.

Data-driven decision support to increase the principal's confidence in data-driven decision making and readily optimize it for the situation.

Supplemental: Leader Characteristics to enhance the principal's confidence in managing his/her team. Enhance the principal's ability to maintain calm thinking and determination when faced with challenges.

Expert 12

Modification; leader characteristics, (2) the principal strengthens the school culture and creates a positive work atmosphere.

environmental factors, and (4) in-depth understanding of the role of the national and Guangxi wisdom platforms. Principals need to increase the interpretation of relevant policy documents to clarify the important position and role of the wisdom platform in education information so as to better guide the school's education information work.

Teamwork ability, (4) Principals establish an effective feedback mechanism.

Data-driven decision support, establishment of platforms, systems and data for data-driven decision making, etc.

Expert 13

modifications; vision, and (5) the principal needs to regularly review and adjust long-term goals to ensure that they remain aligned with the school's overall strategy.

Leader Characteristics, (7) The principal should strongly believe in the role of education information technology in promoting the development of the school and positively face the challenges and difficulties.

Environmental factors, (1) Principals need to pay atention to the purification, beautification and civilization of the school environment to provide a good environment for teachers and students to learn and work.

Supplementary: teamwork skills, the principal to strengthen the communication and exchange of teachers and students expectations, to form a common vision and goals.

Expert 14

Modification; Vision, (3) To enhance the principal's ability to make timely budgetary adjustments to the school's actual situation.

Of the environmental factors, (7) to enhance teachers' ability to use digital education resources rationally. Principals need to strengthen training and guidance for teachers' ability to use digital educational resources to ensure that teachers can use digital educational resources reasonably and effectively to improve teaching and learning effects.

Data-driven decision-making support, to improve the principal's ability to collect, organize and analyze data, to use data to provide a basis for decision-making, and to improve the scientificity and accuracy of decision-making.

Supplementary: Leader Characteristics, Principals should ensure the timely and accurate implementation of state policies and improve the timeliness of school work. Ensure smooth implementation of policies at the school level.

Teamwork skills, Principals expand the scope of cooperation, cooperation is not limited to resource sharing, but also project cooperation, research cooperation, etc., to promote the common progress of the school and society.

Evaluation Form

Research Title: Strategies for developing information leadership for principal of high School in Guangxi.

Part1: List of evaluation experts:

No.	expert	Education background	Experience (year)	work unit
1	Professor	Doctoral degree	10	Nanning Normal University
2	Professor	Doctoral degree	13	Guangxi University
3	Professor	Doctoral degree	15	Guizhou Normal University
4	Professor	Doctoral degree	13	Anhui Normal University
5	Professor	Doctoral degree	11	Southwest University
6	Professor	Doctoral degree	9	East China Normal University
7	Principal	bachelor's degree	13	Liuzhou Tiyi Middle School
8	Director	bachelor's degree	15	Guilin E-learning Station.
9	Director	bachelor's degree	17	Wuzhou E-learning Station.
10	Principal	bachelor's degree	18	Da'an High School, Pingnan County, Guigang City
11	Principal	bachelor's degree	14	Wuzhou High School

Part 2: Evaluation form

No	Strategies	suitability					Feasibility				
1. Promoting Vision		5	4	3	2	1	5	4	3	2	1
1	Promote the ability of principals to efficiently implement school work plans. By formulating clear and comprehensive work plans, we ensure that all school affairs are carried out in an orderly manner, while emphasizing the effectiveness and sustainability of our work.										
2	Promote the principal's ability to outline the school's vision, set goals, and clarify the direction of progress. Vision is the long-term goal of the school, and the goal of striving is the short-term roadmap to achieve this vision. The principal needs to be able to clearly depict the future of the school and point out the direction for teachers and students to work together.										
3	Developing reasonable funding budget for educational information. Funds are an important guarantee for promoting the process of educational information. The principal needs to ensure sufficient funding investment, and at the same time, allocate it reasonably to avoid waste, and adjust the budget in a timely manner according to the actual situation of the school.										
4	Promote the abilities of all teachers and students in information technology. This includes providing systematic information technology training for managers, teachers, and students, enabling them to fully utilize information										

No	Strategies	suitability					Feasibility				
	technology to improve teaching quality, enhance learning outcomes, and optimize school management processes.										
5	development and optimization of medium - and long-term goals for educational information. The goal should not only be forward-looking, but also practical and actionable. With the development of the school and changes in the external environment, principals need to regularly review and adjust these goals to ensure they are always consistent with the overall strategy of the school.										
2. Enhancing Leader Characteristics		5	4	3	2	1	5	4	3	2	1
1	Promote principals to demonstrate a high level of professional ethics and dedication, and fully devote themselves to the management and development of the school.										
2	Enhance the principal's understanding of school culture and create a positive and upward working atmosphere.										
3	Promote the principal to establish effective communication channels, actively listen to the opinions and suggestions of teachers, and provide them with timely and accurate answers.										
4	Development Principal actively encourages teachers to propose innovative viewpoints and suggestions, and stimulates the wisdom of the team.										
5	Promote principals to actively guide and motivate teachers to actively learn new										

No	Strategies	suitability					Feasibility				
	technologies, cultivate their technical literacy and innovation ability.										
6	Promote principals to provide technical training and learning resources for teachers, and promote their professional development.										
7	Development Principal firmly believes in the role of educational information in promoting the development of the school, and actively faces challenges and difficulties.										
8	Enhance the principal's sense of identification and confidence in the information of team education.										
9	Sustainability ensures the timely and accurate implementation of national policies by principals, and improves the timeliness of school work.										
10	Develop effective implementation mechanisms for principals to ensure the smooth implementation of policies at the school level.										
11	Development Principal should demonstrate firm determination and strong willpower to overcome difficulties and obstacles, In the process of promoting educational information.										
12	Enhance the principal's management team to remain calm and firm in the face of challenges, and work together to tackle difficulties.										
3. Developing Environmental Factors		5	4	3	2	1	5	4	3	2	1
1	Sustainable principals to demonstrate a high level of professional ethics and dedication, and										

No	Strategies	suitability					Feasibility				
	fully devote themselves to the management and development of the school.										
2	Enhance the principal's understanding of school culture and create a positive and upward working atmosphere.										
3	Promote the principal to establish effective communication channels, actively listen to the opinions and suggestions of teachers, and provide them with timely and accurate answers.										
4	Development Principal actively encourages teachers to propose innovative viewpoints and suggestions, and stimulates the wisdom of the team.										
5	Promote principals to actively guide and motivate teachers to actively learn new technologies, cultivate their technical literacy and innovation ability.										
6	Promote principals to provide technical training and learning resources for teachers, and promote their professional development.										
7	Development Principal firmly believes in the role of educational information in promoting the development of the school, and actively faces challenges and difficulties.										
8	Enhance the principal's sense of identification and confidence in the information of team education.										
4. Developing Teamwork ability		5	4	3	2	1	5	4	3	2	1
1	Develop Principal reinforces the idea of "people-oriented management", genuinely cares about										

No	Strategies	suitability					Feasibility				
	the development and needs of teachers and students, and creates a harmonious and beneficial working and learning environment for them.										
2	Develop principals to encourage a culture of open communication, listen to different opinions, and stimulate the team's spirit of innovation.										
3	promote principals engage in regular open and frank dialogues with teachers to discuss and resolve challenges and problems at work, and to encourage teachers to share their experiences and innovative ideas.										
4	promote principals effective feedback mechanisms among to ensure a two-way flow of information.										
5	Develop principals to actively seek opportunities for collaboration with various types of external organizations, including enterprises, universities and research institutes, etc., in order to gain access to more resources, technologies and ideas.										
6	promote principals to expand the scope of cooperation, which is not only limited to resource sharing, but also project cooperation, research cooperation, etc., so as to promote the common progress of the school and the society.										
7	promote principals gain a deeper understanding of the ideals and aspirations of teachers and students, and to integrate them with the										

No	Strategies	suitability					Feasibility				
	school's development plan, so as to form a common vision and goal.										
8	develop principals to encourage teachers and students to participate in school decision-making and to ensure that their voices are heard and included in the decision-making process.										
5. Elevate Data Driven Decision Support		5	4	3	2	1	5	4	3	2	1
1	Improve principals' ability to use data tools to assess students' personal development. Principals need to master the use of data tools to analyze individual students' progress and needs in terms of academics, skills, and interests in order to provide more personalized educational support to students.										
2	Improve principals' confidence that data decisions achieve desired results. Principals should make decisions based on data and analytics, and have confidence that data-driven decisions lead to positive results, while making adjustments and optimizations based on actual results.										
3	Improve principals' ability to use data collection and analysis to make decisions on certain matters. Principals should have the ability to collect, organize and analyze data, and use data to provide a basis for decision-making and to improve the scientificity and accuracy of decisions.										
4	Improve principals' awareness of data security. Principals need to pay atention to data security										

No	Strategies	suitability					Feasibility				
	and privacy protection, ensure the compliant use and storage of data, and avoid data leakage and misuse.										
5	Develop principals' support mechanisms for data-driven decision-making. Principals need to establish a comprehensive data collection, analysis and reporting system to ensure the accuracy and timeliness of data and provide strong support for decision-making.										
6	Enhance the data literacy of the principal's management team. Principals should develop their team's data awareness and analytical skills so that team members can understand and apply data-driven decision-making methods.										
7	Enhance principal's continuous optimization of the data-driven decision-making process. The principal should continuously optimize the decision-making process based on data analysis and actual results, and continuously improve the mechanism and methods of data-driven decision-making.										

Appendix D

The Results of the Quality Analysis of Research Instruments

1. Results of IOC

Information Leadership for principal of high School in Guangxi	For experts					IOC	Proposal
	1	2	3	4	5		
I. Vision							
1.Principal formulated a long term , medium term, and sort-term infoumation vision plan for the school's development.	1	1	1	1	1	1	valid
2. Principal establishes an information management system	1	1	1	1	1	1	valid
3. Principal has plans for the construction of information infrastructure	1	1	1	1	1	1	valid
4. Principal has a plan for the use of information funds	1	1	1	1	1	1	valid
5. Principal explains the school's information vision plan to teachers and students on different occasions	1	1	1	1	1	1	valid
6. Principal can complete the planned plan in an orderly manner.	1	1	1	1	1	1	valid
7. Principal will make adjustments to the information vision plan midway according to the actual situation.	1	1	1	1	1	1	valid
8. Principal will often describe the school's aspirational vision, goals and direction.	1	1	1	1	1	1	valid
9. Principal formulates the management team's specific division of labor for information goals.	1	1	1	1	1	1	valid
10. Principal understands the current status of school infoumation development and conducts phased evaluations of the plan.	1	1	1	1	1	1	valid

Information Leadership for principal of high School in Guangxi	For experts					IOC	Proposal
	1	2	3	4	5		
11. Principal plans the security and confidentiality of the school network	1	1	1	1	1	1	valid
II. Leader characteristics							
1. Principal can provide suggestions for the development of teachers and allow them to develop their strengths.	1	1	1	1	1	1	valid
2. Principal can patiently listen to teachers' questions and answer their questions.	1	1	1	1	1	1	valid
3. Principal is not a person who worries easily and has many friends.	1	1	1	1	1	1	valid
4. Principal is open-minded and has a strong sense of innovation.	1	1	1	1	1	1	valid
5. Principal loves his job and has a strong sense of professionalism and enterprising spirit.	1	1	1	1	1	1	valid
6. Principal likes to explore and discover unknown things.	1	1	1	1	1	1	valid
7. Principal keeps learning to enrich and improve his abilities.	1	1	1	1	1	1	valid
8. Principal feels that he is better than most people.	1	1	1	1	1	1	valid
9. Principals sometimes use threats or flattery to persuade others to do what you want.	1	1	1	1	1	1	valid
10. Principal When faced with extreme pressure, there may be times when you feel as if you are about to collapse.	1	1	1	1	1	1	valid
11. Principal often feels energetic and full of energy.	1	1	1	1	1	1	valid

Information Leadership for principal of high School in Guangxi	For experts					IOC	Proposal
	1	2	3	4	5		
12. Principal may be somewhat self-centered and not considerate of other people's feelings.	1	1	1	1	1	1	valid
13. Principal encounters setbacks, you feel discouraged and want to give up.	1	1	1	1	1	1	valid
III. Environmental factor							
1. Principal and the school carry out the construction of information-based teaching resources.	1	1	1	1	1	1	valid
2. Principal establishes an incentive mechanism for teachers to implement information-based classroom teaching.	1	1	1	1	1	1	valid
3. Principal adopts information management methods for school personnel, finance, and asset management.	1	1	1	1	1	1	valid
4. Principal's school has sufficient information equipment and network speed to satisfy teachers and students' teaching and learning.	1	1	1	1	1	1	valid
5. Principal and school teachers can skillfully use information technology to promote teaching and scientific research.	1	1	1	1	1	1	valid
6. Principal's campus environment is purified, beautified and civilized to a very high degree.	1	1	1	1	1	1	valid
7. Principal and school teachers actively participate in infoumation training and take the initiative to learn new technologies.	1	1	1	1	1	1	valid
8. Principal's teachers and students in the school are proficient in using information technology communication tools.	1	1	1	1	1	1	valid

Information Leadership for principal of high School in Guangxi	For experts					IOC	Proposal
	1	2	3	4	5		
9. Principal's school builds a new information-based learning environment to promote students' use of technology to support learning.	1	1	1	1	1	1	valid
10. Principal uses the campus network to promote the school	1	1	1	1	1	1	valid
11. Principal's school uses the campus network for academic affairs and teaching management	1	1	1	1	1	1	valid
12. Principal's school uses the campus network to share teaching resources	1	1	1	1	1	1	valid
13. Principal The school has established a reward system for teachers' information-based teaching.	1	1	1	1	1	1	valid
14. Principals often participate in infoumation-related training	1	1	1	1	1	1	valid
IV. Teamwork ability							
1. Principal will encourage teachers to express ideas that are different from others.	1	1	1	1	1	1	valid
2. Principal of the school will use the campus online meeting to make a special summary and reflection on the feedback of different opinions.	1	1	1	1	1	1	valid
3. Principal often communicates and discusses issues at work with teachers.	1	1	1	1	1	1	valid
4. Principal often coordinates work and conflicts between school departments/employees.	1	1	1	1	1	1	valid
5. Principal implements the people-oriented management concept everywhere.	1	1	1	1	1	1	valid

Information Leadership for principal of high School in Guangxi	For experts					IOC	Proposal
	1	2	3	4	5		
6. Principal cooperates and communicates with parents, the community and other entities outside the school.	1	1	1	1	1	1	valid
7. Principal's school has established a platform for teachers to participate equally and help each other learn.	1	1	1	1	1	1	valid
8. Principal communicates frequently with students to meet their learning needs.	1	1	1	1	1	1	valid
9. Principal can clearly express the need to communicate and exchange information	1	1	1	1	1	1	valid
10. Principal believes that information tools have a positive effect on team collaboration and communication.	1	1	1	1	1	1	valid
11. Principal's management team will discuss and resolve disputes together.	1	1	1	1	1	1	valid
12. Principals and school teachers voluntarily share their experiences with each other.	1	1	1	1	1	1	valid
V. Data-driven decision support							
1. Principal makes decisions on some matters based on the data analysis collected by the school.	1	1	1	1	1	1	valid
2. Principals rely on data analysis in their decision-making processes.	1	1	1	1	1	1	valid
3. Principal conducts statistical analysis on the school's information-based teaching	1	1	1	1	1	1	valid
4. Principal will base the school's digital resource construction plan on data.	1	1	1	1	1	1	valid

Information Leadership for principal of high School in Guangxi	For experts					IOC	Proposal
	1	2	3	4	5		
5. Principal conducts data analysis and evaluation on the school's use of financial funds.	1	1	1	1	1	1	valid
6. Principal will use relevant data as a reference when evaluating school development.	1	1	1	1	1	1	valid
7. Principal believes that data-based decision-making will achieve the desired results.	1	1	1	1	1	1	valid
8. Principal encourages the school to build a data culture system or method.	1	1	1	1	1	1	valid
9. Principal believes that data-driven decision-making is more scientific than subjective decision-making.	1	1	1	1	1	1	valid
10. Principals use data tools to evaluate teacher performance	1	1	1	1	1	1	valid
11. Principals use data tools to assess individual student development.	1	1	1	1	1	1	valid
12. Principal is convinced that data-driven decision-making can improve school efficiency.	1	1	1	1	1	1	valid
13. Principal has a high awareness of data security.	1	1	1	1	1	1	valid

2. Reliability Analysis

Reliability analysis of research instruments

To ensure the reliability and validity of the data collected by the questionnaire, the researcher conducted a reliability and validity analysis of the questionnaire using SPSS software.

Cronbach Alpha

Number of items	Sample size	Cronbach α
63	159	.975

From the table above, it can be seen that the reliability coefficient value is 0.975, which is greater than 0.9, indicating that the quality of the research data reliability is high. Regarding the "α coefficient with deleted items," the reliability coefficient does not significantly increase when any item is deleted. Therefore, it indicates that the items should not be deleted. Regarding the "CITC value," the CITC values for all analyzed items are above 0.4, indicating that there is a good correlation between the analyzed items, which also indicates a good reliability level. In summary, the reliability coefficient value of the research data is higher than 0.9, which comprehensively indicates high data reliability quality and can be used for further analysis.

3. Experts fill in data on suitability and feasibility of strategies or improving the information leadership for Principal of High School in Guangxi

Variable	Suitability/expert											Feasibility/expert										
/no	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10	11
1. Promoting Vision																						
1	5	5	5	4	3	5	3	4	4	4	4	5	4	5	5	5	5	5	5	5	5	5
2	5	5	5	3	3	4	2	4	4	5	3	5	5	5	5	5	5	5	5	5	5	5
3	5	5	5	5	4	4	4	4	4	4	4	3	4	3	5	5	5	5	5	5	5	5
4	3	5	3	1	4	5	4	3	4	4	4	3	4	3	5	5	5	5	5	5	5	5
5	5	5	5	4	5	5	4	5	4	5	4	3	5	3	5	5	5	5	5	5	5	5
2. Enhancing Leader Characteristics																						
1	4	4	4	3	3	4	3	5	4	3	4	4	5	4	5	5	5	5	5	5	5	5
2	5	4	5	2	4	4	4	5	5	4	5	2	4	2	5	5	5	5	5	5	5	5
3	5	5	5	4	5	4	4	5	4	4	4	3	4	3	5	5	5	5	5	5	5	5
4	5	4	5	4	5	5	5	5	4	4	4	3	4	3	5	5	5	5	5	5	5	5
5	5	4	5	4	4	5	5	5	4	5	4	5	3	5	5	5	5	5	5	5	5	5
6	5	5	5	5	4	4	4	5	4	5	4	5	4	5	5	5	5	5	5	5	5	5
7	4	4	4	3	4	4	4	5	3	4	4	3	4	3	5	5	5	5	5	5	5	5
8	5	5	5	4	4	4	4	5	4	4	4	5	3	5	5	5	5	5	5	5	5	5
9	3	4	3	5	4	3	4	5	4	5	3	3	3	3	5	5	5	5	5	5	5	5
10	5	4	5	5	4	4	4	5	3	4	4	5	4	5	5	5	5	5	5	5	5	5
11	4	4	4	3	4	4	4	4	4	5	4	3	5	3	5	5	5	5	5	5	5	5
12	5	4	5	4	5	4	5	4	3	4	5	4	3	4	5	5	5	5	5	5	5	5
3. Developing Environmental Factors																						
1	4	4	4	5	5	4	5	5	4	4	3	3	4	3	5	5	5	5	5	5	5	5
2	5	4	5	5	5	4	5	5	4	4	5	5	3	5	5	5	5	5	5	5	5	5
3	5	3	5	4	3	4	5	3	5	3	5	5	3	5	5	5	5	5	5	5	5	5
4	5	3	5	5	3	4	3	4	4	4	4	4	3	4	5	5	5	5	5	5	5	5
5	5	3	5	4	3	4	3	4	5	4	4	4	3	4	5	5	5	5	5	5	5	5

Variable /no	Suitability/expert											Feasibility/expert										
	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10	11
6	4	4	4	5	3	4	3	4	5	4	4	3	3	3	5	5	5	5	5	5	5	5
7	3	4	3	4	3	3	3	5	5	4	4	3	4	3	5	5	5	5	5	5	5	5
8	3	4	3	4	3	3	3	5	5	4	3	3	4	3	5	5	5	5	5	5	5	5
4. Developing Teamwork ability																						
1	3	5	3	3	3	4	3	4	4	5	4	2	5	2	5	4	5	4	3	3	5	3
2	3	5	3	3	3	4	3	4	5	3	4	2	4	2	5	4	2	5	5	5	4	5
3	5	4	5	3	5	4	4	4	4	4	4	3	4	3	5	4	4	5	2	3	5	5
4	5	5	5	2	5	4	4	3	4	3	5	5	5	5	4	5	3	5	5	5	2	5
5	5	5	5	2	5	4	4	3	4	4	4	4	5	4	2	3	4	5	5	5	5	3
6	3	4	3	5	4	4	4	4	5	3	4	3	3	3	5	4	5	5	3	5	3	2
7	4	5	4	4	4	4	4	3	4	3	4	4	4	4	5	5	5	4	5	3	5	5
8	5	4	5	3	3	4	4	5	4	4	4	5	4	5	5	5	5	4	5	2	5	5
5. Elevate Data Driven Decision Support																						
1	4	4	4	4	3	4	3	5	3	5	4	4	3	4	5	5	3	4	3	3	5	5
2	5	5	5	5	3	4	3	5	4	5	4	4	4	4	5	5	2	5	2	5	5	3
3	3	5	3	4	4	4	4	4	5	4	3	4	4	4	5	4	3	3	2	3	4	5
4	5	5	5	4	3	5	3	4	4	4	4	5	4	5	5	5	5	5	5	5	5	5
5	5	5	5	3	3	4	2	4	4	5	3	5	5	5	5	5	5	5	5	5	5	5
6	5	5	5	5	4	4	4	4	4	4	4	3	4	3	5	5	5	5	5	5	5	5
7	3	5	3	1	4	5	4	3	4	4	4	3	4	3	5	5	5	5	5	5	5	5

Appendix E

Certificate of English

BANSOMDEJCHAOPRAYA
RAJABHAT UNIVERSITY

This is to certify that

Mr. He Jian

Achieved BSRU English Proficiency Test (BSRU-TEP) level

C2

Given on 25th January 2021

(Assistant Professor Dr Kulsirin Aphiratvoradej)

Director

Appendix F

The Document for Accept Research

มหาวิทยาลัยมหาจุฬาลงกรณราชวิทยาลัย
๗๙ หมู่ ๑ ตำบลลำไทร อำเภอวังน้อย
จังหวัดพระนครศรีอยุธยา ๑๓๑๗๐
โทรศัพท์ ๐ ๓๕๒๔ ๘๐๐๐-๕ โทรสาร ๐ ๓๕๒๔ ๘๐๓๔
www.mcu.ac.th

ที่ อว ๘๐๐๕.๔/ ๐๘๑

๒๙ พฤษภาคม ๒๕๖๗

เรื่อง ตอบรับผลงานบทความได้รับการตีพิมพ์

เรียน คุณเหอ เจียน, ผศ.ดร.พัชรา เดชโฮม, รศ.ดร.นิรันดร์ สุธีนิรันดร์, ผศ.ดร.ศรายุทธ เศรษฐขจร

ตามที่ท่านได้ส่งบทความเรื่อง **"กลยุทธ์การพัฒนาความเป็นผู้นำด้านข้อมูลของอาจารย์ใหญ่โรงเรียนมัธยมในกวางสี"** เพื่อตีพิมพ์ในวารสาร มจร การพัฒนาสังคม (JMSD) นั้น กองบรรณาธิการได้พิจารณาบทความโดยเสนอต่อคณะกรรมการผู้ทรงคุณวุฒิกลั่นกรองจำนวน ๓ ท่าน (Peer Review) ตรวจแก้ไขเพื่อความสมบูรณ์ของบทความก่อนลงตีพิมพ์ กองบรรณาธิการจึงขอแจ้งให้ท่านทราบว่าบทความที่ท่านส่งมาได้ผ่านการกลั่นกรอง และอยู่ในขั้นตอนการตีพิมพ์ในวารสาร มจร การพัฒนาสังคม ปีที่ ๙ ฉบับที่ ๓ (กันยายน - ธันวาคม ๒๕๖๗)

อนึ่ง วารสาร มจร การพัฒนาสังคม ได้รับอนุมัติจัดทำวารสารตามมติสภามหาวิทยาลัยในคราวประชุมครั้งที่ ๑๐/๒๕๕๙ วันที่ ๑๔ มกราคม ๒๕๖๐ มีวัตถุประสงค์เพื่อเป็นเวทีเผยแพร่ผลงานวิจัย และผลงานทางวิชาการของคณาจารย์ นักวิชาการ นักวิจัย นิสิต ทั้งในและนอกสถาบัน โดยมีกำหนดออกวารสารปีละ ๓ ฉบับ ทั้งนี้ วารสาร มจร การพัฒนาสังคมได้ผ่านการรับรองคุณภาพ และอยู่ในฐานข้อมูลของศูนย์ดัชนีการอ้างอิงวารสารไทย TCI : Thai-Journal Citation Index Centre วารสารกลุ่มที่ ๒ (๑๐ มกราคม ๒๕๖๒ - ๓๑ ธันวาคม ๒๕๖๗) กองบรรณาธิการขอขอบคุณทุกท่านที่ให้ความสนใจและส่งผลงานวิชาการเพื่อตีพิมพ์ในวารสาร มจร การพัฒนาสังคม มา ณ โอกาสนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.โกนิฏฐ์ ศรีทอง)
บรรณาธิการบริหาร

สำนักงาน วารสาร มจร การพัฒนาสังคม (JMSD)
โทรศัพท์ : ๐๓๕ - ๒๔๘ ๐๐๐ ต่อ ๘๒๗๘ มือถือ ๐๘๔ ๗๗๓ ๕๑๗๙
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