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Strategy for Sustainable Development Literacy of Basic Education in Developing Areas of Western China

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ABSTRACT

This study aims to (i) explore the current status of sustainable development literacy of Basic Education in developing areas of Western China, (ii) examine the guidelines of sustainable development literacy of Basic Education in developing areas of Western China, and (iii) explore the suitability and feasibility of guidelines for sustainable development literacy of Basic Education in developing areas of Western China. Ten schools were selected for the study, identified by the Ministry of Education in the western region, including 5 primary schools, 3 middle schools, and 2 high schools, with a total sample of 635 participants, specifically: (i) 265 teachers, (ii) 225 school administrative, and (iii) 145 stakeholders. The research tools included questionnaires, structured interviews, and evaluation forms. Data analysis utilized percentage, mean standard deviation, and content analysis. The results indicate that the overall level of sustainable development literacy in basic education in the western regions of China is relatively high, although there are imbalances in different aspects. The guidelines for improvement are categorized into 9 core strategies with a total of 45 measures. The assessment of the suitability and feasibility of the guidelines received the highest ratings.

Key words: Basic Education, Sustainable Development, Western Regions of China, Promotion Strategies

INTRODUCTION

Basic education is essential for improving the population's quality and fostering talent for national development (Ministry of Education of China, 2020). It provides the foundation for further education or vocational training. In October 1951, China initiated the "Decision on Reforming the Education System," with a focus on popularizing primary education (Zhang & Li, 2019). By 1957, the school-age children's enrollment rate reached 61.7%, reflecting the progress in primary education (Wu et al., 2021). In the 21st century, the Western Development Strategy aimed to reduce regional disparities in education, and the introduction of «nine-year compulsory education» was pivotal for alleviating poverty in western China (Chen, 2020).

By 2020, China's education system had made significant strides, with goals from the "Medium- and Long-Term Education Reform and Development Plan" and "China's Education Modernization 2035" achieved (Ministry of Education of China, 2020). However, challenges remain, especially in western regions like Sichuan, where imbalances in educational development persist, particularly between urban and rural areas (Liu & Zhao, 2022). Four key issues have been identified: (1) imbalance in educational development, (2) inequity in the distribution of educational resources, (3) an overemphasis on exam-oriented education, and (4) a narrow focus on exam results by local governments, ignoring holistic youth development (Wang, 2021). In 2016, the government addressed these issues with policies aimed at reducing the urban-rural education gap (Zhang, 2016). Addressing these challenges is critical for the sustainable development of education in these areas and contributes to national economic growth (Chen, 2020).

While significant progress has been made in improving basic education in China's western regions, several gaps remain unaddressed in existing literature and policy evaluations. First, there is limited research on the long-term effectiveness of the Western Development Strategy in addressing urban-rural disparities beyond quantitative metrics, such as enrollment rates. Second, existing studies often emphasize policy initiatives but lack in-depth analysis of their implementation challenges at the grassroots level, particularly in rural and remote schools. Third, the overemphasis on exam-oriented education and its impact on students' holistic development, including emotional and social skills, remains underexplored. Furthermore, despite acknowledging socio-cultural influences, few studies examine how local cultural practices and community involvement can be systematically integrated into educational reforms. Addressing these research gaps could provide a more comprehensive

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understanding of how to sustainably enhance education in China's western regions.

Objectives

1. To explore the current status of sustainable development literacy of Basic Education in developing areas of Western China.
2. To examine the guidelines for literacy of Basic Education in developing areas of Western China.
3. To determine the suitability and feasibility of guidelines for sustainable development literacy of Basic Education in developing areas of Western China.

Research Questions

1. What is the current status of sustainable development literacy of Basic Education in developing areas of Western China?
2. What are the guidelines for sustainable of development education literacy in China?
3. How suitability and feasibility are the proposed guidelines for sustainable development literacy in basic education?

Independent Variable

Based on the compilation and analysis of relevant theories and research content, this study explores strategies for promoting the sustainable development literacy of basic education in the context of the Western Development regions from four dimensions and ten aspects. The independent variable of the study is the guidelines of sustainable development literacy of Basic Education in developing areas of Western China while the dependent variable is the sustainable development literacy of Basic Education consisting of the four dimensions, i.e., Academic Administration, Budget Management, Personnel Administration, and General Administration; and ten factors as follows: Personnel, Financial, Materials and Equipment, Management, Social and Cultural, Legal, Economic, Politics, Technology, Geographical Environment.

BASIC EDUCATION FOR SUSTAINABLE DEVELOPMENT

Concept of Basic Education

According to the International Standard Classification of Education (ISCED 2011) by UNESCO, "basic education" includes the first four levels of the eight education levels: Level 0, "early childhood education"; Level 1, "primary education"; Level 2, "lower secondary education"; and Level 3, "upper secondary education." The World Conference for Education for All, held in Thailand in 1990, defined "basic education" as providing individuals with the essential knowledge, skills, and attitudes necessary to understand and engage with their environment, receive education and training, and participate effectively in the economic, social, and cultural development of their communities. It emphasized the importance of ensuring that everyone has the opportunity to access education that meets their basic learning needs.

Gu (1986) views basic education as the education of fundamental general cultural knowledge for the people, aimed at cultivating essential qualities of citizens and laying the groundwork for further education or vocational training. Typically, it refers to primary education and, in some cases, includes junior high school education, with a duration of 5 to 9 years, often associated with compulsory education.

Li (2016) describes basic education as the foundation for an individual's lifelong development. It is the minimum general education required for children and adolescents, as defined by national regulations, to cultivate citizens' quality. This includes preschool education, primary education, junior high school education, and senior high school education.

Yang (2023) interprets basic education as the "minimum education" for everyone. He believes that basic education should focus on the development of social productivity, economy, and culture, with the understanding that, in contemporary society, knowledge is increasing rapidly, and the rate of obsolescence is accelerating.

Connection between Sustainable Development Literacy and Basic Education

Basic education is essential for cultivating future citizens, spreading knowledge, and enhancing skills and literacy. It plays a crucial role in shaping individual abilities, promoting social progress, and driving sustainable economic development. In recent years, scholars have increasingly studied the relationship between sustainable development literacy and basic education.

Osman et al. (2017) argue that education contributes to sustainable development literacy in five key ways: (1) it can inspire the belief that everyone has the ability and responsibility to create positive global change; (2) it serves as the primary means of transforming sustainable development literacy, enhancing people's ability to turn ideas into reality; (3) it helps cultivate the values, behaviours, and lifestyles necessary for a sustainable future; (4) it teaches decision-making skills; and (5) it builds the capacity for future-oriented thinking.

According to research by Hsu et al. 2022) the Impacts of Population Aging on China's Economy. Global Journal of Emerging Market Economies. 14. 097491012110670. 10.1177/09749101211067079. (2024), population patterns like low birth rates, ageing, and regional fluctuations are rising as China undergoes economic and social development. By improving the population's scientific, cultural, health, and moral attributes, strengthening foundational education can help control population size and composition. This promotes the growth of a superior, well-distributed populace and advances modernisation in the Chinese manner.The study highlights the importance of foundational education in developing awareness and skills for sustainable development, in addition to serving as a venue for knowledge transfer. By integrating environmental education and social responsibility into the curriculum, the education system can strengthen students' environmental awareness and sense of social responsibility, laying a solid foundation for sustainable development.

The Sustainable Development Literacy Education in China

Zhu et al. (2023) state that UNESCO's sustainable development literacy education has been positively embraced in China. The Chinese government has taken measures to incorporate it into the education system. These include forming a National Task Force to focus on teacher training, school infrastructure, and curriculum development. Training programs at multiple levels aim to enhance educators' skills, while locally tailored curricula and resources, like Beijing's "Environmental and Sustainable Development Literacy Education" textbook, support classroom teaching. The "Guidelines for China's Sustainable Development Literacy Education Program" integrates this initiative into quality education, national curricula, extracurricular activities, curriculum reform, and moral education.

Despite progress, challenges persist, such as intense academic competition, limited quality resources, and the entrenched exam-focused system. Research shows that while sustainable development literacy has advanced significantly, these systemic issues hinder its full implementation.

Factors Affecting the Sustainable Development Literacy of Basic Education

The sustainable development literacy of basic education is shaped by factors like educational resources, teaching quality, policies, economic conditions, informatization, and international cooperation. Z. Wang (2021) identifies significant urban-rural disparities in preschool education in China, where urban areas surpass rural ones, despite less pronounced teacher quality differences. R. Wang (2021) stresses the importance of teacher quality, advocating for incentive mechanisms to improve professional skills and stabilize the workforce. Zhang (2008) highlights the transformative role of information technology in enriching resources, promoting personalized learning, and enhancing teaching effectiveness, though better integration, resource sharing, and teacher training are needed. Ding (2023) explores the internationalization of education in Beijing and Shanghai, which introduces advanced concepts, fosters global exchanges, and enhances competitiveness, preparing students for global challenges. Researchers examine interrelated dimensions, such as resources, teacher quality, and policies, which collectively influence sustainable development literacy in basic education and its overall progress.

Definition of Strategic Management

The modern strategic management theory is generally considered to have originated in the United States during the 1960s. Although its evolution over nearly sixty years is relatively short, it has demonstrated significant development potential. Coupled with the widespread implementation of strategic management practices, this theoretical research has yielded fruitful results and has shown a prosperous trend characterized by a convergence of various perspectives (Table 1).

Table 1. The main points defining strategic management are as follows:

Name	Main points
Pauw et al. (2015)	The positioning strategy management concept highlights achieving a competitive advantage by selecting unique market positions to meet specific customer needs.
Yang (2023)	Strategic management involves analyzing an organization's internal and external environment, setting goals, making choices, and implementing them for long-term success.
Chen (2023)	Strategic management involves analyzing internal and external environments to set long-term goals and devise strategies to achieve them.
Daniel and Herbert (2006)	Strategic management models include strategic planning, strategic control, and financial control, focusing on strategy, centralization, and financial indicators.

Method for Formulating Strategies

Scholars have explored strategic approaches, with Gürel (2017) introducing SWOT analysis, a tool for objectively assessing an organization's internal (strengths, weaknesses) and external (opportunities, threats) conditions. This involves prioritizing factors through a matrix to formulate action plans, leveraging strengths, addressing weaknesses, seizing opportunities, and mitigating threats while considering past, present, and future contexts. TOWS analysis builds on SWOT by emphasizing the integration of internal and external factors to develop strategies. It combines strengths with opportunities (SO), strengths with threats (ST), weaknesses with opportunities (WO), and weaknesses with threats (WT), offering a structured framework for strategic decision-making in complex environments. Both methods identify internal and external factors but differ in application depth. This paper applies SWOT analysis to evaluate the internal resources influencing sustainable development literacy in Western China's basic education and uses TOWS analysis to devise strategies for external challenges, aiming to enhance the region's educational competitiveness.

Steps for Developing a Strategy

Stonehouse and Snowdon (2007) define strategy formulation as the process by which a business or organization establishes long-term development directions and goals, and the strategic choices and action plans to achieve these goals, in response to changes in the external environment and internal resource conditions. This involves environmental analysis, internal resource assessment, and future forecasting.

In summary, strategy formulation is a systematic process that requires a comprehensive consideration of external environments and internal resource conditions, clear long-term development goals, the selection of appropriate strategic directions, and the development of effective action plans, ultimately leading to implementation and ongoing monitoring of strategy execution.

RESEARCH METHODOLOGY

Population and the Sample Group

Researchers selected ten basic education institutions in the western region, recognized by the Ministry of Education, including five primary schools, three middle schools, and two high schools, based on the actual situation. The study involved a total of 1,545 participants, categorized as follows: 1) Teachers - 638 individuals, 2) School administrators - 377 individuals, and 3) Stakeholders - 210 individuals.

The sample size for this study was determined using the provided sample size formula (Krejcie & Morgan, 1970). A stratified random sampling method was applied to select 635 participants from a total of 1,545 individuals, specifically (1) 265 teachers, (2) 225 administrators, and (3) 145 stakeholders (Table 2).

Interview Participants

This study will interview individuals involved in basic education in the western regions of China to understand the issues, approaches, and influencing factors related to sustainable development literacy management. The interview participants come from primary and secondary schools in the western region of China, specifically: (1) 5 teachers, (2) 3 school administrators, and (3) 2 stakeholders. The respondents had to meet the following criteria: (1) have at least 5 years of experience working in basic education in the western region, with a master's degree or higher; (2) possess a thorough understanding of the operational models of basic education schools; (3) be willing to participate in recorded interviews; 4) be willing to review their interview records for verification.

Focus Group Discussion Participants

Researchers once again invited 10 participants for a focus group discussion, including 5 teachers, 3 school administrators, and 2 stakeholders from basic education schools in the sample group. The discussion aimed to explore sustainable development literacy strategies for basic education in China's Western Development, focusing on 4 dimensions, 9 aspects, and 12 questions.

Participants in the focus group discussion must meet the following criteria: 1) Have at least 10 years of experience working in basic education in the Western region and hold a master's degree or an associate senior professional title; 2) Be familiar with the operational models of basic education schools and possess a deep understanding of basic education.

Table 2. Samples for the survey

Position	Population	Sample
Teachers	800	265
School administrators	500	225
Stakeholder	245	145
Total	1545	635

Strategic Evaluation Team

The analysis results of this section were evaluated by a panel of seven experts, all of whom hold doctoral degrees. The panel consisted of one expert with knowledge and experience in strategic formulation, three academic administrators with titles of associate professor or higher, one educational institution administrator with a title of associate professor or higher, and two teachers with titles of associate professor or higher. The evaluation used a five-point rating scale, allowing respondents to choose only one level to assess the appropriateness and feasibility of sustainable development literacy strategies for basic education in the western region of China's development initiative.

Research Procedure

This study employs methods of data collection, analysis, and synthesis, incorporating both quantitative and qualitative data to verify and ensure the accuracy of the information. A survey questionnaire was designed focusing on strategies for promoting the sustainable development literacy of basic education in the underdeveloped western regions of China, and a survey was conducted among teachers, administrators, and stakeholders from 10 basic education schools. In addition, a structured interview questionnaire was developed to conduct interviews with 10 professionals. Through the investigation and analysis of the survey data, this paper proposes strategies for promoting the sustainable development literacy of basic education in the underdeveloped western regions of China.

Step 1: Investigate the current status of sustainable development literacy in basic education in the underdeveloped western regions of China.

Step 2: Conduct expert interviews to explore the formulation of strategies for promoting the sustainable development literacy of basic education in these regions.

Step 3: Evaluate the effectiveness of the strategies designed to promote sustainable development literacy in basic education in the underdeveloped western regions of China.

Step 4: Implement the strategies for promoting sustainable development literacy in basic education in these regions.

Research Instruments

The tools used in this study include questionnaires, interview forms, and an assessment table for sustainable development literacy strategies in basic education in the western region of China. The specific content includes:

The study employed a questionnaire and interviews to evaluate sustainable development literacy in basic education in Western China. The questionnaire, distributed via "Wenjuanxing," consisted of three sections: respondent demographics, a 5-point Likert scale evaluation of sustainable literacy across four dimensions (Academic, Budget, Personnel, General Administration), and ten influencing factors (e.g., legal, economic, geographic).

Structured interviews with middle-level managers addressed four variables: teacher resources, financial management, mechanisms, and talent development. Using SWOT

Table 3. Information about the group of teachers among the respondents. (n 1=265)

type	Personal information	Number of people	Percentage (%)
Types of Schools	Elementary school	160	60
	Middle school	75	28
	High school	30	12
	Total	**265**	**100**
Gender	male	108	59
	female	157	41
	Total	**265**	**100**
Age	25 years old or below	46	17
	26 to 35	43	16
	36 to 45	72	27
	46 to 55	63	24
	56 years old or up	41	16
	Total	**265**	**100**
Education	Bachelor degree	143	54
	Master's degree	106	40
	Doctoral Degree	16	6
	Total	**265**	**100**
job title	Junior Title	75	28
	Intermediate Title	119	45
	Associate Senior Title	45	17
	Senior Title	26	10
	Total	**265**	**100**
work experience year	within 5 years	36	14
	5 to 10 years	67	25
	11 to 15 years	62	23
	16 to 20 years	71	27
	More than 20 years	29	11
	Total	**265**	**100**

and TOWS analyses, the data provided insights into sustainability challenges and strategies, forming a basis for future development plans. There are 4 items of Structured interviews, in each item of the interview, there are 10 sub-items, in total, there are 40 sub-items.

Strategic Evaluation Checklist

Based on the results of the questionnaire and interviews, along with previous literature and theoretical foundations, this study has developed an evaluation form. The researcher has proposed a strategy plan for the sustainable development literacy of basic education in the western regions of China, which has been submitted to experts for assessment. The experts are required to review the adaptability and feasibility of the strategies proposed by the researcher.

Data Collection

When researching the sustainable development literacy strategy of basic education in the western regions of China, data collection is a crucial step. The following is a work plan for data collection, which can be divided into qualitative and quantitative aspects:

Qualitative data collection

In-depth interviews and focus group discussions: Organize groups consisting of teachers, school administrators, and stakeholders for open discussions to identify issues and approaches related to the sustainable development literacy of basic education in the western development regions of China. Analyze the internal and external environments affecting sustainable development literacy in these areas and draft strategic proposals for the sustainable development literacy of basic education.

Quantitative data collection

Survey: Design a questionnaire that targets teachers, school administrators, and stakeholders to understand the current state of basic education and its influencing factors in the western development areas of China.

Effectiveness Evaluation Data: Develop an evaluation scale to be assessed by experts with strategic planning knowledge and capabilities in the field of basic education. The assessment should focus on the suitability and feasibility

Table 4. Information on managers among the respondents (n 2 =225)

type	Personal information	Number of people	Percentage (%)
Types of Schools	Elementary school	118	52
	Middle school	67	30
	High school	40	18
	Total	**225**	**100**
Gender	male	132	57
	female	93	43
	Total	**225**	**100**
Age	25 years old or below	23	10
	26 to 35	48	21
	36 to 45	63	28
	46 to 55	59	26
	56 years old or up	32	15
	Total	**225**	**100**
Education	Bachelor degree	128	59
	Master's degree	78	37
	Doctoral Degree	19	4
	Total	**225**	**100**
Position	Educational Administrator	106	47
	Educational Teaching Manager	81	36
	Vice Principal and Above School Leadership	38	17
	Total	**225**	**100**
work experience year	within 5 years	22	10
	5 to 10 years	43	19
	11 to 15 years	51	23
	16 to 20 years	61	27
	More than 20 years	48	21
	Total	**225**	**100**

of sustainable development literacy strategies for basic education in the western development regions of China.

Data Analysis

Qualitative data analysis

Thematic Analysis: Conduct thematic analysis on qualitative data collected through in-depth interviews and focus group discussions. Identify the core themes related to the sustainable development literacy of basic education in the Western region, such as: improving talent training programs, strengthening the construction of the teaching staff, innovating teaching methods, enriching curriculum content, organizing social practice, enhancing school-enterprise cooperation, and establishing evaluation systems, among others.

Quantitative data analysis

1) Statistical Analysis: Using statistical analysis software to perform statistical analysis on the data collected from quantitative surveys, including:

Method of Mean and Standard Deviation: An analysis of the current situation, influencing factors, and strategies for the sustainable development literacy of basic education in the western development regions of China. The interpretation of the mean data is based on Rensis Likert (1932). The data interpretation is as follows:

4.50 – 5.00 indicates the highest level
3.50 – 4.49 indicates a high level
2.50 – 3.49 indicates an average level
1.50 – 2.49 indicates a low level
1.00 – 1.49 indicates the lowest level

Frequency and Percentage: Analyzing the respondent information of the sample. Categorized by gender, age, educational background, job title, teaching experience, and teaching subject.

2) Content Analysis: The research content of structured interviews is applied through the comparison of different variables.
3) Comprehensive Analysis: A mixed-methods approach is primarily used to integrate qualitative and quantitative data, seeking patterns and intersections to provide a more comprehensive understanding.

Through in-depth analysis, researchers can identify the challenges, strengths, and opportunities for sustainable development literacy in basic education in the western

Table 5. Information about stakeholders among the respondents. (n 3 =145)

type	Personal information	Number of people	Percentage (%)
Types of Schools	Elementary school	81	59
	Middle school	41	28
	High school	23	13
	Total	**145**	**100**
Gender	male	67	46
	female	78	54
	Total	**145**	**100**
Age	25 years old or below	13	9
	26 to 35	31	21
	36 to 45	41	28
	46 to 55	39	27
	56 years old or up	21	15
	Total	**145**	**100**
Education	Bachelor degree	83	57
	Master's degree	53	37
	Doctoral Degree	9	6
	Total	**145**	**100**
Position	Technical personnel	85	59
	Government agency personnel	37	26
	External mentors	23	15
	Total	**145**	**100**
work experience year	within 5 years	18	12
	5 to 10 years	33	23
	11 to 15 years	36	25
	16 to 20 years	32	22
	More than 20 years	26	18
	Total	**145**	**100**

development regions of China, providing strong support for strategic formulation and ultimately achieving the sustainable development literacy goals for both the western regions and basic education.

RESULT

Part One: Classify and analyze the respondents' personal information according to gender, age, years of education, position, etc., and present the data in terms of frequency and percentage (Tables 3-5). Part Two examines the current status of sustainable development literacy in basic education in Western China's developing areas, focusing on Academic Administration, Budget Management, Personnel Administration, and General Administration. Using means and standard deviations, it analyzes the overall literacy level and identifies ten key influencing factors: Personnel, Financial, Materials and Equipment, Management, Social and Cultural, Legal, Economic, Political, Technology, and Geographical Environment. These factors, impacting school management, are evaluated with survey results highlighting their influence. Table 6 shows the current state of basic education in the Western Development Regions of China involves four aspects, with an average level at a moderate standard

Table 6. Analysis of the Current Situation of Sustainable Development Literacy of Basic Education in the Western Region of China (n1+n2+n3=635)

Contents	*M*	*SD*	Level	Rank
Academic Administration	3.70	0.93	high	4
Budget Management	3.71	0.89	high	3
Personnel Administration	3.85	0.93	high	2
General Administration	3.85	0.86	high	1
Total	3.78	0.91	high	

(*M* =3.71). The average level of academic administration is (*M* =3.70), ranking 4th; budget management has an average level of (*M* =3.71), ranking 3rd; personnel administration has an average of (*M* =3.85), ranking 2nd; and general administration leads with an average level of (*M* =3.85), indicating the best performance in administration. The best performance in general administration reaches an average of (*M* =3.85). Among all aspects, while academic administration shows relatively good performance, it remains comparatively low, indicating room for improvement. Overall, the basic education in the Western Development Regions demonstrates

satisfactory performance in various management aspects but requires special attention to the continuous improvement of academic management and other areas. By further strengthening educational infrastructure and resource allocation, it is hoped that the basic education level in this region can be comprehensively enhanced.

Table 7. Analysis of internal factors affecting school management in basic education in developable areas of the west (N1+n2+n3=635)

Contents	*M*	*SD*	Level	Rank
Personnel	3.76	0.93	high	2
Financial	3.74	0.89	high	4
Materials and equipment	3.76	0.89	high	3
Management	4.02	0.90	high	1
Total	3.82	0.91	high	

Table 8. Analysis of external relevant factors affecting the management of basic education schools in developable areas of the west (N1+n2+n3=635)

Contents	*M*	*SD*	Level	Rank
Social and Cultural	4.02	0.91	high	1
Legal	3.81	0.83	high	3
Economic	3.68	0.87	high	6
Politics	3.77	0.82	high	4
Technology	3.98	0.92	high	2
Geographical Environment	3.73	0.87	high	5
Total	3.83	0.88	high	#N/A

Based on Table 7, basic education management in western China's developed regions is moderately high (*M* =3.82). The management team scores highest (*M* =4.02), reflecting strong effectiveness, though further strategy optimization is needed. Personnel management (*M* =3.76) and material/equipment management (*M* =3.76) are also strong but require improvements in teacher training and facilities. Financial management scores lowest (*M* =3.74), highlighting potential concerns about fund transparency and rationality, warranting strengthened supervision. Overall, management performs well, especially the management team, but optimizing personnel, material, and financial aspects remains crucial for educational improvement.

Table 8 shows that external factors positively influence basic education management in Western China. Social and cultural factors score highest (*M*=4.02), emphasizing their strong contribution to education. Technological factors rank second (*M*=3.98), reflecting advancements aiding education. Legal (*M*=3.81) and political (*M*=3.77) factors indicate supportive frameworks and stability. However, geographical (*M*=3.73) and economic (*M*=3.68) factors score lower, highlighting the need for better resource distribution. Overall, the external environment supports educational development, but improvements in geographical and economic factors are crucial for balanced growth and resource optimization.

Table 9 highlights positive academic management in China's Western Development regions. Learning management ranks highest (*M*=3.77), with strong social support. Educational quality measures (*M*=3.76) and innovative technology integration (*M*=3.75) receive high praise. Curriculum implementation and academic work continuity score (*M*=3.74), reflecting effective practices. Resource utilization

Table 9. Analysis of the current status of academic administration in basic education in developable areas of western china (n1+n2+n3=635)

Contents	*M*	*SD*	Level	Rank
1. How do you perceive the level of teacher involvement in the development of educational plans or programs?	3.62	0.92	high	8
2. Is the school able to implement academic work according to the established action plan?	3.74	0.90	high	5
3. Do you believe the school has continuity and systematization in supervising and evaluating academic plans or projects?	3.74	0.76	high	5
4. Is the school curriculum sufficiently detailed during implementation to meet students' learning needs?	3.74	0.78	high	4
5. Does learning management effectively address the needs of parents and the community?	3.77	0.78	high	1
6. Do you think the school places too much emphasis on preparing for competitive exams when organizing learning?	3.53	0.81	high	10
7. How supportive is the school of innovation and technology in learning management?	3.74	0.74	high	3
8. Do students have adequate opportunities to utilise local learning resources for study and research?	3.68	0.81	high	7
9. Does the school provide sufficient training to enhance the academic management capabilities of teachers and administrators?	3.58	0.84	high	9
10. Do you believe the measures taken by the school to ensure educational quality are effective?	3.76	0.82	high	2
Total	3.69	0.82	high	

by students' scores (*M*=3.69), while teacher participation (*M*=3.62) and training support (*M*=3.58) show areas for improvement. Competitive exams score (*M*=3.54), emphasizing the need to balance exam-focused and holistic education. The overall academic management average is (*M*=3.69), indicating strong performance with room for enhanced training and resource allocation.

Table 10 reveals a positive budget management status in basic education within western China's developable areas. Government investment in infrastructure ranks highest (*M*=3.80), showing strong support. Regular budget audits (*M*=3.79) and transparency in allocation (*M*=3.74) highlight compliance and trust. Procurement processes and expenditure monitoring score (*M*=3.74) and (*M*=3.73), reflecting systematic management. Resource mobilization (*M*=3.67) and teacher skills in procurement (*M*=3.66) indicate areas for improvement, with the training needed. The timeliness of welfare fund disbursement (*M*=3.65) also requires attention. The overall average score of (*M*=3.72) demonstrates strong management but suggests enhancing specific areas for greater efficiency and transparency.

Table 11 the personnel management status of basic education in Western China reflects high demand and focus. Effective teacher supervision mechanisms score highest (*M*=3.98), emphasizing discipline. Work environment and salary, influencing professional identity, score (*M*=3.96), while rural teacher mobility (*M*=3.84) highlights attrition concerns. Incentive mechanisms (*M*=3.80) and IT training (*M*=3.88) stress modernization needs. Teacher training and guidance score (3.78), while welfare support scores (*M*=3.71). Resource allocation for professional teachers scores (*M*=3.74), showing gaps. Overall, ongoing improvements in teacher management and training are essential to address challenges effectively.

Table 10. Analysis of the current status of budget management in basic education in developable areas of western china (n1+n2+n3=635)

Contents	*M*	*SD*	Level	Rank
1. Do you think the school's budget planning covers the mission of all programs and projects?	3.68	0.81	high	7
2. Is the government's investment budget for soil and construction sufficient to support the school's implementation?	3.79	0.82	high	1
3. Do teachers possess the necessary knowledge and skills when executing work procurement?	3.65	0.85	high	9
4. Has the monitoring of school budget expenditures formed a continuous system?	3.73	0.85	high	6
5. Do you believe that the disbursement of civil servant welfare funds provided by the government is timely?	3.65	0.81	high	10
6. Is the school able to effectively apply existing procedures during the procurement process?	3.74	0.83	high	5
7. Do you think the budget allocation is transparent and subject to oversight?	3.74	0.78	high	4
8. Does the school conduct regular budget audits to ensure compliance?	3.78	0.80	high	2
9. Is the mobilization and investment of educational resources effectively managed?	3.67	0.79	high	8
10. Do you believe that accountability in budget management is being implemented in the school?	3.76	0.81	high	3
Total	3.72	0.81	high	

Table 11. Analysis of the current status of personnel administration in basic education in developable areas of western china (n1+n2+n3=635)

Contents	*M*	*SD*	Level	Rank
1. Is there currently a shortage of teachers in key subjects and remote areas?	3.51	0.93	high	10
2. Do schools provide sufficient welfare support and safety guarantees for teachers in rural and remote areas?	3.71	0.90	high	9
3. Are new teachers receiving adequate training and guidance in teaching practice?	3.78	0.82	high	7
4. Do schools encourage and support teachers to utilize local resources for innovative teaching?	3.92	0.79	high	3
5. Have schools established effective mechanisms for controlling, supervising, monitoring, and educating teachers to maintain discipline and behavioral standards?	3.98	0.83	high	1
6. Is there a noticeable trend of teachers in remote areas moving to urban or developed regions?	3.83	0.90	high	5
7. Is teachers' professional identity influenced by their work environment and compensation?	3.96	0.84	high	2
8. Do schools offer sufficient training in information technology for teaching to meet modern educational needs?	3.88	0.80	high	4
9. Do the evaluation and incentive mechanisms for teachers effectively motivate their work enthusiasm?	3.80	0.80	high	6
10. Is there a shortage of high-quality professional teachers in the allocation of teaching resources?	3.74	0.89	high	8
Total	3.81	0.86	high	

Table 12 highlights a positive trend in the administrative management of basic education in Western China. Strong infrastructure (4.26), community support (4.18), and effective management systems (4.05) drive success. However, information systems (3.92) and communication services (3.96) need improvement. Overall, achievements are significant, but enhancements in technology and services are necessary for further progress.

Table 13 highlights the strength of school personnel and management. Teachers show excellent qualifications (*M*=4.07), and staffing levels meet needs (*M*=4.03). Morale and collaboration score *(M*= 3.99). Financial management is strong (*M*=4.02), but financial stability (*M*=3.72) and government support (*M*=3.70) need improvement. Learning materials are abundant (*M*=3.94), though teaching facilities (*M*=3.71) and infrastructure maintenance (*M*=3.78) require enhancement. Management excels in clear educational plans (*M*=4.29) and decision-making (*M*=4.05), but internal communication scores lower (*M*=3.79). Overall, the school performs well in personnel and management, with some weaknesses in financial stability and teaching resources needing attention.

Table 14 evaluates external factors in school management in Western China. Social harmony scores highest (*M*=4.31), while community participation is slightly lower (*M*=4.01). Legal frameworks perform well (*M*=4.05), though policies for disadvantaged children need improvement (*M*=3.68). Economic factors lag, with community support for funding scoring (*M*=3.66). Political and technological factors excel in IT systems (*M*=4.38) and internet access (*M*=4.06). Geographic settings aid ecological tourism (*M*=3.95) but face low inter-community cooperation (*M*=3.87). Interviews with 10 experts using SWOT analysis highlight literacy challenges and influencing factors in sustainable education development.

The results of interviews on the internal and external factors affecting the sustainable development literacy of basic education schools in this area revealed the lowest percentage was Q4 = 74% (Table 15). The highest percentage was Q2=82%.

Part Three: Data Analysis of Interviews on Developing Sustainable Education Strategies in the Western Regions of China.

Through a survey of the current status of basic education in the western development areas of China and interviews on the issues, pathways, and influencing factors of sustainable development literacy in basic education, the use of SWOT and TOW for data analysis has laid the foundation for developing a scientifically sound strategy proposal (Tables 16-17). Researchers found that, in general, most schools in the western development regions are at a moderate level, necessitating the formulation of targeted management strategies. Therefore, the researchers suggest that sustainable development literacy strategies for basic education in the Western development areas can be established from nine different aspects:

1. Teacher workforce development,
2. Financial management standards,
3. Infrastructure development,
4. Administrative management efficiency,
5. Socio-cultural impacts,
6. Policy and legal support,
7. Economic development strategies,
8. Technological progress and application, and
9. Improvement of the geographical environment.

Table 12. Analysis of the general administration status of basic education in western china's developing regions (n1+n2+n3=635)

Contents	*M*	*SD*	Level	Rank
1. Do you think the current administrative management of the school effectively supports the achievement of educational goals?	4.01	0.83	high	6
2. Do you believe that the current communication, telephone, and postal services of the school meet the daily administrative management needs?	3.95	0.79	high	8
3. Does the school have adequate basic living facilities, such as teacher dormitories and cafeterias, to ensure the daily lives of teachers and students?	4.01	0.78	high	5
4. Is the school's health status management (including student and staff health check-ups, sanitary conditions, etc.) in place, and are there any safety hazards?	3.96	0.73	high	7
5. Is the school's information system (such as student information and academic management) updated in time to effectively support the school's planning and management?	3.92	0.74	high	9
6. What is the current state of the school's use of technology (such as digital teaching tools and online management platforms) for work and management learning?	3.68	0.82	high	10
7. How is the community's support and participation in basic education?	4.17	0.82	high	3
8. Are the school's classrooms, laboratories, and other teaching facilities conducive to learning and management?	4.25	0.76	high	1
9. What is the condition of the school's buildings (including classrooms, assembly areas, restrooms, etc.)?	4.18	0.76	high	2
10. Are there the school established a mechanism for controlling, monitoring, and evaluating activity outcomes to ensure the effectiveness and efficiency of administrative management?	4.04	0.78	high	4
Total	4.02	0.80	high	

Table 13. Analysis of internal factors related to school management in the underdeveloped regions of western china. (N1+n2+n3=635)

Personnel	***M***	***SD***	**Level**	**Rank**
1. Is the staffing adequate to meet the daily teaching and management needs of the school?	4.03	0.80	high	2
2. Do teachers' professional qualifications and teaching skills meet or exceed industry standards?	4.07	0.79	high	1
3. How is the morale and team collaboration atmosphere among staff?	3.99	0.90	high	3
Total	4.03	0.83	high	
Financial	***M***	***SD.***	**Level**	**Rank**
4. Is the school's financial status stable enough to meet daily operation and basic development needs?	3.72	0.93	high	2
5. Is the funding support from the government and education departments timely and sufficient?	3.70	0.90	high	3
6. Does the school have an effective financial management system to ensure transparency and efficiency in fund usage?	4.02	0.81	high	1
Total	3.817752101	0.89658662	high	
Materials and equipment	***M***	***SD***	**Level**	**Rank**
7. Are the teaching facilities (such as computers, laboratory equipment, etc.) sufficient and updated promptly?	3.71	0.87	high	3
8. Are the learning materials, reference books, and other resources for students abundant and easily accessible?	3.94	0.82	high	1
9. What is the maintenance status of the school's infrastructure (such as classrooms, libraries, playgrounds, etc.)?	3.78	0.90	high	2
Total	3.81	0.87	high	
Management	***M***	***SD***	**Level**	**Rank**
10. Does the school management team possess professional management capabilities and effective decision-making mechanisms?	4.05	0.85	high	2
11. Has the school established clear and actionable annual education plans and teaching goals?	4.29	0.74	high	1
12. Is the communication and coordination mechanism within the school smooth enough to facilitate effective information flow up and down?	3.79	0.92	high	3
Total	4.04	0.87	high	

The researcher once again invited 10 participants for a focus group discussion, including 5 teachers, 3 school administrators, and 2 stakeholders from 8 sample primary education schools. Based on survey questionnaires, interview results, and relevant literature, the discussion centered on 4 dimensions, covering 9 aspects and 12 questions, exploring a draft strategy for the sustainable development literacy of basic education in the western regions of China.

Based on the focus group discussions, strategies for the sustainable development literacy of basic education in the western development regions of China have been proposed, including nine main strategies and 45 specific measures (Table 18).

Part Four: Evaluation Results on the Suitability and Feasibility of Implementing Strategies for Sustainable Development Literacy of Basic Education in the Western Development Regions of China.

The analysis results in this section were evaluated by a panel of seven experts, all of whom hold doctoral degrees. The panel includes one expert with knowledge and experience in strategy formulation, three academic administrators with titles of associate professor or higher, one educational institution administrator with a title of associate professor or higher, and two teachers with titles of associate professor or higher. The evaluation employed a five-point rating scale, where respondents could select only one level to assess the appropriateness and feasibility of sustainable development literacy strategies for basic education in the western regions of China.

The assessment of 9 areas and 45 strategies for sustainable education in Western China shows high applicability (M=4.43) and feasibility (M=4.40), indicating strong adaptability and practicality (Table 19). These strategies address local needs and align with socio-economic trends, forming a foundation for education reform and quality improvement. Adequate resources and support are crucial to ensure their effective implementation, contributing to sustainable progress in education development.

DISCUSSION

This research determined the sustainable development literacy strategies for Basic Education in the Western Development

Table 14. Analysis of external factors related to school management in the underdeveloped regions of western china (n1+n2+n3=635)

Social and Cultural	***M***	***SD***	**Level**	**Rank**
1. Do parents and the public recognize the importance of sending their children to education?	4.05	0.85	high	2
2. Does the community actively participate in organizing and supporting educational activities?	4.01	0.86	high	3
3. Can different ethnic groups coexist harmoniously and participate in community life?	4.31	0.71	high	1
Total	4.12	0.82	high	
Legal	***M***	***SD.***	**Level**	**Rank**
4. Do local government regulations support the construction of educational facilities, such as schools and assembly buildings?	3.82	0.81	high	2
5. Is there a fair legal framework for managing the appointment and transfer of educational officials?	4.05	0.76	high	1
6 . Does educational policy adequately consider the needs of early vulnerable children, especially in marginalized areas?	3.68	0.87	high	3
Total	3.85	0.835195652	high	
Economic	***M***	***SD***	**Level**	**Rank**
7 . Is the economic situation of the community sufficient to provide the necessary funding for educational development?	3.66	0.89	high	2
8. Does the community's self-sufficient agriculture support family livelihoods and promote education?	3.68	0.85	high	1
9. Are there cooperatives or organizations established to improve economic conditions to support children's education?	3.57	0.89	high	3
Total	3.64	0.88	high	
Politics	***M***	***SD***	**Level**	**Rank**
10. Is the local government's attitude towards managing educational institutions positive and supportive?	3.87	0.91	high	2
11. Are local politicians actively promoting and supporting the development of school management?	3.81	0.84	high	3
12. Does local politics recognize and acknowledge the importance of educational management in marginalized areas?	3.96	0.84	high	1
Total	3.88	0.87	high	
Technology	***M***	***SD***	**Level**	**Rank**
13. Does the educational institution have an effective information technology system to assist in management?	4.01	0.79	high	3
1 4. Can the school access the internet and technological support from higher-level institutions?	4.38	0.63	high	1
15. Does the educational institution have an internet system for online learning and management?	4.06	0.81	high	2
Total	4.14	0.77	high	
Geographical Environment	***M***	***SD.***	**Level**	**R ank**
16. Is the geographical environment of the educational institution conducive to promoting ecotourism and cultural preservation?	3.84	0.78	hig h	3
17. Is the school located in a geographical environment suitable for natural learning and research?	3.94	0.80	high	1
18. Is there good economic flow and cooperation between communities in border areas?	3.84	0.77	high	2
Total	3.87	0.79	high	

Regions of China. The researchers will discuss their findings in three parts:

Current Status of Sustainable Development Literacy of Basic Education

The current state of sustainable development literacy in basic education in China's Western Development Regions shows progress but faces notable challenges. Teacher input in educational planning is often overlooked, hindering policy effectiveness. Insufficient professional training for educators and administrators affects educational quality. Resource allocation disparities, especially in remote areas, and procurement inefficiencies undermine teaching standards and morale. High teacher turnover due to low pay and poor conditions remains a concern (Smith, 2020). Despite

Table 15. Interview content analysis table (issues, methods, and influencing factors on the sustainaable literacy development of basic education in the western development regions of china)

Answer	Interviewers										Percentage
	1	2	3	4	5	6	7	8	9	10	
Q1: Are there advantages of sustainable development literacy in basic education in Western development in Western China?	9	10	7	8	9	5	9	7	8	8	80%
Q2: Are there the disadvantages of sustainable development literacy in basic education in the western regions of China's large-scale development?	9	7	10	7	10	8	9	7	7	8	82%
Q3: Is there an opportunity that exists for the sustainable development literacy of basic education in the western regions of China?	8	8	8	8	9	9	8	7	8	8	81%
Q4: Are there threats to the sustainable development literacy of basic education in the western regions of China's development?	8	8	7	6	8	5	7	7	8	8	74%

Note: *There are 4 items of structured interviews, in each item of the interview there are sub-items ally, and there are 40 sub-items.*

Table 16. SWOT Analysis Results

Strengths	Weaknesses
S1. Policy Support: National initiatives ensure funding and resources for education. **S2. Resources**: Natural and cultural assets enhance educational diversity and innovation. **S3. Infrastructure**: Improved facilities elevate the quality of education. **S4. Student Diversity**: Diverse backgrounds boost creativity and practical skills. **S5. Economic Growth**: Local economic development supports education and provides job opportunities.	**W1. Weak Evaluation System**: Current methods fail to reflect educational outcomes effectively. **W2. Resource Inequality**: Uneven distribution of resources causes unequal opportunities. **W3.Insufficient Funding**: Basic education lacks adequate financial support. **W4.Limited Family Support**: Families struggle to support children's education. **W5.Neglected Mental Health**: Schools lack focus and resources for mental health education. **W6.Low Teacher Incentives**: Poor compensation deters quality educators. **W7. Outdated Methods**: Traditional teaching lacks innovation and modernization. **W8.Weak Innovation Focus**: Schools underemphasize practical and creative skills.
Opportunities	**Threats**
O 1. Tech Advancement: IT boosts educational innovation and teaching efficiency. **O2. Growing Investment**: Public interest increases funding for education. **O3. Policy Support**: The government enhances financial and policy backing. **O4. Innovation and Reform**: Ongoing reforms improve education sustainability. **O5. Community Involvement**: Families and communities strengthen collaboration. **O6. Resource Sharing**: Shared mechanisms improve educational quality. **O7. Economic Integration**: Economic ties ease educational cooperation. **O8. Unique Resources**: Local assets like tourism and culture enhance education.	**T1. Resource Competition**: Western regions risk losing top teachers and students. **T2.Economic Impact**: Fluctuations harm education investment and quality. **T3.Assessment Pressure**: Rigid assessments stress schools and teachers. T4.**Equity Issues**: Resource gaps worsen educational inequality. **T5.Cybersecurity Risks**: IT advancements pose cybersecurity threats. **T6.Environmental Challenges**: Harsh conditions hinder basic education. **T7.Cultural Influence**: External cultures affect student values. **T8.Population Changes**: Aging and urbanization reshape education needs. **T9.Global Competition**: International education pressures increase.

strong facility construction and administrative management, uneven resource distribution and limited IT integration persist (Chen, 2020; Li et al., 2021). Community involvement is minimal despite ethnic harmony, and policies for vulnerable children are inadequate. Improvements in teacher engagement, training, resource equity, and community participation are essential. The findings highlight notable advancements in sustainable development literacy within basic education in the Western Development Regions of China but reveal persistent structural and systemic challenges. For instance, the underrepresentation of teachers in educational planning mirrors global trends in developing regions, where policy formulation often excludes practitioners' insights, leading to misaligned educational priorities.

Table 17. TOWS analysis results

	Internal advantages	**internal disadvantages**
External opportunities	**SO** **S1. + O4. Cultural Identity**: Use policy support and cultural heritage to create distinctive humanities courses that foster cultural identity. **S2.+ O1.Tech Integration**: Combine natural and educational resources with IT to innovate teaching methods. **S3.+ O5. School-Enterprise Collaboration**: Partner with enterprises to merge humanities with vocational education, boosting practical skills. **S5.+O7Economic Development**: Harness local economic growth to attract resources and improve education quality and job opportunities.	WO **W1.+ O1. Evaluation Reform**: Integrate humanistic education into talent programs with policy support. **W3.+O2. Investment Solution**: Attract and train quality teachers driven by social demand. **W6.+O6. IT Enhancement**: Use technology to enrich resources and improve teaching and learning. **W5.+ O5. Practical Experience**: Collaborate with enterprises to diversify and enhance student practice.
External threats	ST **S2.+T1. Balanced Funding**: Use policy support to secure resources for humanities education alongside skills training. **S3.+T2.Education-Industry Balance**: Partner with enterprises to align humanities and vocational training with automation trends. **S4.+T4. Promote Equity**: Combat biases against vocational education with diverse humanities courses and humanistic literacy.	WT **W2.+T1. Fair Allocation**: Increase humanities courses to ensure balanced resource distribution and equal opportunities. **W5.+T3. Innovative Teaching**: Use interactive and case-based methods to align vocational education with automation trends. **W7.+T4. Modern Curriculum**: Update content to meet societal needs and improve vocational education quality. **W10.+ T4. Holistic Development**: Emphasize humanities literacy to balance skills training and foster well-rounded talent.

Table 18. The strategies for sustainable development literacy of basic education in the western development region of china

No.	**Strategies**
1	Development of the Teaching Staff
2	Financial Management Standards
3	Infrastructure Construction
4	Administrative Management Efficiency
5	Socio-Cultural Impact
6	Policy and Legal Support
7	Economic Development Strategies
8	Technological progress and application,
9	Improvement of the Geographic Environment

Construction of Sustainable Development Literacy Strategies for Basic Education

Strategies for sustainable development literacy in basic education in Western China span teacher training, financial management, infrastructure, administration, and socio-cultural influences but face significant challenges. Teacher training plans emphasize continuous development but are hindered by heavy workloads and uneven access, risking burnout and reduced teaching. Financial management systems exist but struggle with limited local resources and a lack of qualified managers, leading to inefficiencies and wasted funds (Miller et al., 2018). Infrastructure upgrades are prioritized but often unattainable for remote schools due to resource constraints, affecting student performance and engagement (Audrey et al., 2024). Administrative efficiency goals, including IT integration, face challenges from inadequate technical support and oversimplified processes (Thang & Tuyen, 2023). Community involvement, essential for improving outcomes, remains weak, as policies alone cannot foster the required cultural change (Njie, 2018). Enhancing implementation, resource allocation, and regional adaptation is critical to realizing these strategies. The discussion integrates a deeper analysis of the identified challenges and offers comparative insights from existing literature. By leveraging international best practices and emphasizing contextual adaptability, the proposed strategies for sustainable development literacy can be more effectively aligned with the unique needs of China's Western Development Regions. The assessment of sustainable development literacy strategies for basic education in China's western regions demonstrates high theoretical feasibility but reveals gaps in practical application. While teacher training initiatives align with global best practices, such as Finland's mentorship-based models, localized workload management remains critical. Financial strategies show potential but require enhanced transparency, as evidenced by Rwanda's success with digital monitoring systems. Infrastructure challenges mirror global issues but could benefit from public-private partnerships, as seen in sub-Saharan Africa. Finally, fostering community involvement necessitates grassroots engagement, drawing lessons from South Korea's community-driven reforms for effective implementation.

Suitability and Feasibility of Sustainable Development Literacy Strategies

The assessment of sustainable development literacy strategies for basic education in China's western regions highlights

Table 19. Evaluation and analysis of the effectiveness of sustainable development literacy strategies for basic education in the western development regions of china (N=5)

Strategy	**suitability**			**feasibility**		
	M	***SD.***	**Result**	***M***	***SD***	**Result**
Strategic 1 Development of the Teaching Staff						
Total	4.57	0.60	highest	4.51	0.56	highest
Strategy	**suitability**			**feasibility**		
	M	***SD.***	**Result**	***M***	***SD***	**Result**
Strategic 2 Financial Management Standards						
Total	4.51	0.61	highest	4.44	0.61	high
Strategy	**suitability**			**feasibility**		
	M	***SD.***	**Result**	***M***	***SD***	**Result**
Strategic 3 Infrastructure Construction						
Total	4.62	0.49	highest	4.48	0.612200879	high
Strategy	**suitability**			**feasibility**		
	M	***SD.***	**Result**	***M***	***SD***	**Result**
Strategic 4 Administrative Management Efficiency						
Total	4.50	0.56	highest	4.48	0.56	high
Strategic 5 Socio-Cultural Impact						
Total	4.31	0.71	high	4.37	0.59	high
Strategy	**suitability**			**feasibility**		
	M	***SD.***	**Result**	***M***	***SD***	**Result**
Strategic 6 Policy and Legal Support						
Total	4.51	0.65	highest	4.51	0.61	highest
Strategy	**suitability**			**feasibility**		
	M	***SD.***	**Result**	***M***	***SD***	**Result**
Strategic 7 Economic Development Strategies						
Total	4.22	0.77	high	4.14	0.69	high
Strategy	**suitability**			**feasibility**		
	M	***SD.***	**Result**	***M***	***SD***	**Result**
Strategic 8 Technological Advancements and Applications						
Total	4	0.76	high	4.05	0.76	high
Strategy	**suitability**			**feasibility**		
	M	***SD.***	**Result**	***M***	***SD***	**Result**
Strategic 9 Improvement of the Geographic Environment						
Total	4.45	0.65	high	4.31	0.67	high
Average Total	4.43	0.56	high	4.40	0.45	high

their high suitability and feasibility, reflecting rigorous expert evaluations. Continuous teacher training and digital literacy initiatives are emphasized but are hindered by workloads and limited support, underscoring the need for systematic communication platforms (Chen, 2020). Financial management strategies show promise with budget systems but face transparency issues, with ineffective audits failing to eliminate corruption. Infrastructure investments are highly rated but poorly aligned with local economies, leaving rural schools underfunded and lacking maintenance (Su et al., 2020; Wang, 2018). Administrative management reforms are effective but suffer from weak enforcement and suboptimal IT utilization (Zhou, 2023; Li, 2016). Community involvement scores well in recommendations but remains insufficient to enhance education quality (Ding, 2023; Albon et al., 2016). Strong policies exist, but legal aid and enforcement require strengthening (Zhang, 2014; Zhang & Xu, 2023). In conclusion, while the sustainable development literacy strategies for basic education in China's western regions demonstrate high suitability and feasibility, challenges persist in implementation and alignment with local needs. Key areas for improvement include reducing teacher workloads, enhancing financial transparency, and aligning infrastructure investments with rural priorities. Strengthening community involvement and administrative enforcement, alongside adopting global best practices like scalable digital platforms and localized engagement programs, could significantly enhance outcomes. Addressing these gaps with

tailored, actionable measures will ensure the strategies not only meet theoretical benchmarks but also achieve practical, long-term success in improving educational equity and quality.

CONCLUSION

The study analyzes sustainable development literacy in basic education within China's western regions, focusing on academic, budget, personnel, and general administration dimensions. While general administration excels, academic management needs improvement. Internal factors, like strong management teams, and external social-cultural influences support progress, but financial management, infrastructure, and economic-geographical conditions require attention. Researchers propose nine strategies, including teacher development, financial transparency, infrastructure upgrades, policy support, and technological advancement, to improve equity, quality, and resources. Experts find these strategies highly suitable and feasible, aligning with regional needs and fostering systematic reforms for sustainable educational and socio-economic development.

Sustainable development literacy strategies for basic education in western China require a multifaceted approach for comprehensive improvement. Teacher training is vital. Regular online and offline sessions should enhance teachers' educational philosophies and skills. A multidimensional incentive mechanism, combining material and spiritual rewards, can encourage teacher participation and facilitate resource sharing among schools, Standardizing financial management is crucial. A comprehensive budgeting system and transparent auditing can improve resource efficiency. Training for financial personnel will minimize decision-making errors, ensure transparency in fund flow, and enhance operational efficiency. Infrastructure investment is necessary for rural schools, focusing on buildings, teaching facilities, and campus networks to support online education. Improving sports facilities is essential for students' health. Optimizing administrative management through streamlined processes and IT improvements will enhance efficiency. Feedback mechanisms are important for addressing the needs of teachers and students. Socio-cultural factors like home-school cooperation and community involvement are key to a positive educational environment, supported by targeted policies for equity and quality. Integrating education with local industries will strengthen economic foundations, while technological advancements like smart campuses will improve educational management and safety.

The sustainable development literacy of basic education in western China is a multifaceted issue requiring strategic enhancements. Optimizing educational resource allocation is essential. Conducting thorough analyses to identify the needs of various regions, especially remote areas, will help bridge educational gaps. Community involvement and partnerships with businesses can diversify funding sources. Focusing on teacher professional development is crucial. A systematic training mechanism should be established to continuously improve teaching skills while creating career pathways and incentives that can attract talent. Enhancing working conditions will boost teacher satisfaction and retention. Leveraging information technology will enhance management efficiency. Strengthening infrastructure and developing online platforms will facilitate real-time monitoring of resources. Data analysis tools can optimize decision-making, ensuring effective policy implementation that promotes educational equity and quality in line with societal needs and trends.

REFERENCES

Albon, S., Iqbal, I., & Pearson, M. (2016). Strategic Planning in an Educational Development Centre: Motivation, Management, and Messiness. *Collected Essays on Learning and Teaching, 9,* 207. 10.22329/celt.v9i0.4427.

Audrey, A., Nicholas, K., & Hadiij, N. (2024). School Infrastructure and Learning Environments: A Case Study of UPE Schools in Masaka. *Metropolitan Journal of Social and Education Research, 3*(10), 537-550.

Chen, Y. (2020). *Educational reforms and development in 21st century China: A focus on west n regions*. Beijing University Press.

Chen, Y. X. (2023). Analysis of the current situation and problems of school-enterprise cooperation in vocational education under the background of industry-education integration. *Journal of Lanzhou Petrochemical Vocational and Technical University, 23*(4*),* 51-55.

Chu, X. (2024). Characteristics and Enlightenment of Canadian Higher Vocational Education. *Journal of Changchun Normal University, 43*(1*)***,** 137-141.

Daniel, J., & Herbert, S. (2006). *From strategy to change-implementation of strategic planning in universities***.** Translated by Zhou Yan and Zhao Jumping. Guangxi Normal University Press.

Ding, Q. (2023). *Research on the suitability of undergraduate-level vocational education talent training programs—taking pilot colleges approved by the Ministry of Education as an example* **[**Master's thesis]. Guangxi Normal University.

Gürel, E. (2017). SWOT analysis: A theoretical review. *Journal of International Social Research, 10*, 994-1006. 10.17719/jisr.2017.1832. https://www.researchgate.net/publication/319367788 SWOT_ANALYSIS_A_THEORETICAL_REVIEW/citation/download

Gu, M. (2006). An analysis of the impact of traditional Chinese culture on Chinese education. *Frontiers of Education in China, 1*, 169-190. 10.1007/s11516-006-0001-8.

Hsu, Y.-H., Yoshida, H., & Chen, F. (2022). The Impacts of Population Aging on China's Economy. *Global Journal of Emerging Market Economies*, *14*(1), 105-130. https://doi.org/10.1177/09749101211067079

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607–610.

Li, N (2016). *Research on humanistic literacy education strategies for higher vocational students* [Master thesis]. Northwest A&F University.

Liu, X., & Zhao, M. (2022). Urban-rural education disparities in Sichuan province: Causes and solutions. *Journal of Chinese Education Studies*, *45*(3), 123-136.

Ministry of Education of China. (2020). *Medium- and Long-Term Education Reform and Development Plan (2010-2020)*. Ministry of Education.

Njie, H. (2018). *How do socio-economic and cultural differences among social groups affect the education of their children in their locality*? Retrieved from: https://www.researchgate.net/post/How_do_socio-economic_and_cultural_differences_among_social_group_affect_the_education_of_their_children_in_their_locality/5a786c115b49523b772dfcd9/citation/download.

Osman, A., Ladhani, S., Findlater, E., & McKay, V. (2017). *Curriculum Framework for the Sustainable Development Literacy Goals*. Commonwealth Secretariat.

Pauw, J. D., Gericke, N., Olsson, D., & Berglund, T. (2015). *The effectiveness of education for sustainable development. Sustainability, 7*(11), 15693–15717.

Stonehouse, G., & Snowdon, B. (2007). Competitive Advantage Revisited: Michael Porter on Strategy and Competitiveness. *Journal of Management Inquiry, 16*, 256-273. 10.1177/1056492607306333

Thang, P., & Tuyen, T. (2023). Efficient administrative management strategy for activities in international higher education institutions: Lessons for Vietnam. *International research journal of management, IT and social sciences, 10*(3), 221-232. http: doi.org/10.21744/irjmis.v10n3.2327.

Wang, J. (2021). *Exam-oriented education and its impact on holistic youth development in China*. *Journal of Contemporary Education, 39*(4), 78-89.

Wang, R. (2021). A brief analysis of Korean sustainable development literacy education based on SDGs. *Science and Education Wenhui, 522***(**36), 23-26.

Wang, Z. (2021). Integration of professional education and humanistic education in higher education. *Journal of Jilin Medical University, 42***(**2), 157-158.

Wu, H., Zhang, T., & Li, J. (2021). *Historical evolution of compulsory education in China*. Shanghai Educational Press.

Yang, M. X. (2023). Research on the quality assurance and evaluation system of higher vocational education. *Journal of Hubei Open Vocational College, 36***(**17**),** 56-58.

Zhang, L., & Li, K. (2019). *The history of China's primary education reform: Achievements and challenges*. *Journal of Chinese Historical Studies, 27*(2), 56-72.

Zhang, M. (2008). On the connotation, value and characteristics of humanistic education. *Journal of Shanxi Normal University (Social Science Edition), 35*(4), 130-134.

Zhang, Q. (2016). *Policies to address urban-rural educational gaps in China*. Ministry of Education Publications.

Zhang S.C, & Xu, C.Y. (2023). Social Security of the Quality of Basic Education in the New Era: Basic Characteristics, Main Approaches, and Ways to Achieve It. *Contemporary Education Forum* (2), 49-56.

Zhang, X. (2014). Just and Sustainable Development A New Research Paradigm and Framework. *Journal of Northeastern University: Social Sciences, 16*, 6.

Zhang, Y. (2004). Education for sustainable development. *Tianjin Education Press***,** 22-23.

Zhou, Y. (2023). *Research on classroom teaching interaction strategies from the perspective of smart education.* (Master's thesis). Southwest University.

Zhu, M., Kuang, Y., Zhang, L.L., & Lei, X. R. (2023). Analysis of the implementation framework of "Education for Sustainable Development Literacy" and my country's action suggestions. *Adult Education, 439*(8), 11-17.