

FACTORS AFFECTING INSTRUCTIONAL MANAGEMENT EFFICIENCY OF PRIMARY SCHOOLS IN SHANGRAO CITY, CHINA

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Abstract: This study investigated factors affecting instructional management efficiency in public primary schools in Shangrao City, Jiangxi Province, China. A quantitative descriptive-correlational design was employed with a sample of 400 full-time teachers and school administrators ($N = 850$) selected through stratified random sampling stratified by school location (urban/rural) and school type (public/private). Data were analysed using SPSS 26.0. Four predictor variables — Leadership of School Administrators (X_1), Teacher Professional Competence (X_2), Instructional Resources (X_3), and School Management Systems (X_4) — were examined against Instructional Management Efficiency (Y). Results show that all four factors significantly and positively affect instructional management efficiency. Teacher Professional Competence was the strongest predictor ($\beta = 0.277$), followed by Leadership of School Administrators ($\beta = 0.265$), School Management Systems ($\beta = 0.214$), and Instructional Resources ($\beta = 0.187$). The model explained 67.4% of variance in instructional management efficiency ($R^2 = 0.674$, Multiple $R = 0.821$, $F(4, 395) = 201.33$, $p < .001$). Findings offer empirical evidence for improving instructional management in Chinese primary education.

Keywords: *Instructional management efficiency; Primary schools; School leadership; Teacher professional competence; School management systems.*

1. Introduction

Instructional management efficiency is a critical condition shaping daily teaching and learning in primary schools. When teachers receive clear expectations, schedules are well-structured, and resources are equitably allocated, student learning outcomes improve substantially. China's educational reforms — including the National Curriculum Reform (2001), the Teacher Education Revitalisation Action Plan (2018-2022), and China Education Modernisation 2035 — have placed increasing demands on school leaders and teachers to adopt systematic and efficient instructional management approaches

(Ministry of Education of the People's Republic of China, 2018, 2019).

The scale and urgency of this challenge are significant. According to OECD (2022), China serves over 100

million primary school students, yet average instructional management efficiency scores in rural schools remain measurably below urban counterparts. Nationally, disparities in management capacity affect an estimated 30-40% of primary schools in inland provinces (Ministry of Education of the People's Republic of China, 2019). Shangrao City, a medium-sized city in Jiangxi Province with approximately 850 primary school teachers

and administrators, illustrates these dynamics: despite improvements in school infrastructure, disparities in teacher quality, leadership capacity, and resource distribution continue to constrain instructional outcomes, particularly in rural and less-developed districts (Zhu, Devos, & Li, 2011).

Existing research identifies four major factors shaping instructional management efficiency: the leadership behaviour of school administrators, teacher professional competence, availability of instructional resources, and the effectiveness of school management systems (Hallinger & Murphy, 1985; Leithwood et al., 2004; Stronge, 2018). Hallinger (2011) confirmed that instructional leadership plays a crucial role in shaping teaching quality and school-wide learning effectiveness. Teacher competence has been consistently identified as the most powerful school-level lever for educational quality; OECD (2022) data indicate that schools systematically investing in teacher professional development achieve more sustained quality improvements than those focusing on structural reforms alone. Most existing Chinese studies, however, examine these factors individually and focus on secondary or higher education. Integrated, quantitative investigations at the primary school level specifically in Jiangxi Province remain scarce.

This study, therefore, aimed to fill this research gap by investigating the combined predictive effects of all four factors on instructional management efficiency in Shangrao City's public primary schools through quantitative survey research and multiple regression analysis. Findings are intended to support school administrators, teacher trainers, and policymakers in designing targeted, evidence-based interventions.

2. Research Question

What are the factors that affect instructional management efficiency of primary schools in Shangrao City, China?

3. Research Objective

To identify and analyse the key factors affecting instructional management efficiency of primary schools in Shangrao City, China.

4. Research Hypotheses

H1: Leadership of school administrators significantly affects instructional management efficiency of primary schools in Shangrao City.

H2: Teacher professional competence significantly affects instructional management efficiency of primary schools in Shangrao City.

H3: Instructional resources significantly affect instructional management efficiency of primary schools in Shangrao City.

H4: School management systems significantly affect instructional management efficiency of primary schools in Shangrao City.

5. Conceptual Framework

This study is grounded in four interrelated theoretical traditions that collectively explain how school-level factors shape instructional management efficiency.

Instructional Leadership Theory (Hallinger & Murphy, 1985; Hallinger, 2011) posits that principals who actively define the school's educational mission, manage the instructional programme, and promote a positive learning climate produce measurably more efficient teaching and learning environments. Robinson (2011) extended this argument, demonstrating that leaders who participate directly in teacher learning and development generate learning gains nearly

four times larger than those from other leadership approaches. This theory underpins the X1 construct.

Professional Competence Theory (Day & Sachs, 2004; Stronge, 2018) holds that professionally competent teachers – those with strong pedagogical content knowledge, classroom management skills, and commitment to ongoing professional learning – require less administrative supervision and implement instructional plans with greater fidelity. Stronge (2018) synthesised decades of teacher effectiveness research to establish that competence is the most powerful school-level determinant of student achievement. OECD (2022) data confirm this at the national level. This theory underpins X2.

Systems Theory (Hoy & Miskel, 2013) conceptualizes schools as open systems in which inputs (including physical and human resources), processes, and outputs are interdependent. Resources are viewed as organisational inputs whose value is only realized through skilled leadership and teacher utilization. Leithwood et al. (2004) identified resource management as an indirect but significant pathway through which leadership improves instructional outcomes. This theory underpins X3.

Organisational Justice Theory (Colquitt et al., 2001) distinguishes between distributive, procedural, and interactional justice in institutional systems. In a meta-analysis covering 25 years of research, Colquitt et al. (2001) demonstrated that perceived fairness in management systems increases employee compliance, trust, and cooperative behaviour. In school settings, this translates into smoother implementation of instructional policies and more efficient coordination of teaching activities (Bush, 2011). Tschannen-Moran (2014) further demonstrated that transparent and fair management systems build organisational trust, which underpins

cooperative instructional behaviour. This theory underpins X4.

Table 5.1 presents the variable-theory-reference mapping for the conceptual framework.

Variable	Construct	Theoretical Basis	Key Reference (s)
X1	Leadership of School Administrators	Instructional Leadership Theory	Hallinger & Murphy (1985); Hallinger (2011); Robinson (2011)
X2	Teacher Professional Competence	Professional Competence Theory	Day & Sachs (2004); Stronge (2018); OECD (2022)
X3	Instructional Resources	Systems Theory	Hoy & Miskel (2013); Leithwood et al. (2004)
X4	School Management Systems	Organisational Justice Theory	Colquitt et al. (2001); Bush (2011); Tschannen-Moran (2014)
Y	Instructional Management Efficiency	Instructional Leadership / Systems Theory	Hallinger & Murphy (1985); Hoy & Miskel (2013)

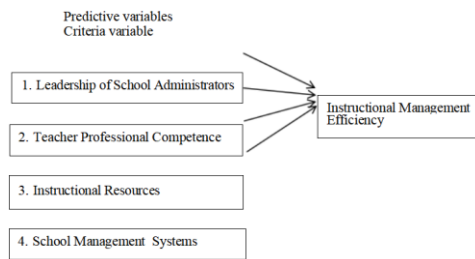


Figure 2.1 The conceptual framework |

Figure 5.1 The Conceptual Farmwork

6. Materials and Methods

6.1 Research Design and Variables

This study employed a quantitative, descriptive-correlational research design. The conceptual framework included four predictor variables: Leadership of School Administrators (X1), Teacher Professional Competence (X2), Instructional Resources (X3), and School Management Systems (X4). The criterion variable was Instructional Management Efficiency (Y).

6.2 Population and Sample

The target population comprised 850 full-time teachers and school administrators in public primary schools in Shangrao City, Jiangxi Province, China. A stratified random sampling method was employed to ensure proportionate representation across two stratification criteria: (1) school location — urban vs. rural; and (2) school type — public vs. private. The minimum required sample of 400 was calculated using the Yamane (1973) formula at a 95% confidence level with a $\pm 5\%$ margin of error; the sample was expanded to 400 to improve statistical stability and to account for potential non-response.

Inclusion criteria for participants: Participants were required to meet all of the following criteria: 1. Full-time teacher or school administrator currently working in a public primary school in Shangrao City, Jiangxi Province, China; 2. At least 1 year

of continuous work at the school 3. Actively carried out teaching tasks: 4. Voluntarily agree to take part in the research and complete the questionnaire.

The final valid sample of 400 participants was distributed as follows: urban public schools (n = 212, 53.0%), urban private schools (n = 56, 14.0%), rural public schools (n = 117, 29.3%), and rural private schools (n = 15, 3.7%). The four strata sum to 400 participants (100%). All participants were full-time teachers or school administrators.

6.3 Research Instrument

A structured questionnaire was developed comprising five sections of 10 items each (50 items total), covering all five constructs on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Item sources were: X1 — adapted from the Principal Instructional Management Rating Scale (PIMRS; Hallinger & Murphy, 1985); X2 — based on Day and Sachs (2004) and Stronge (2018); X3 — developed from Hoy and Miskel (2013); X4 — grounded in Bush (2011) and Colquitt et al. (2001); Y — adapted from Hallinger and Murphy (1985) and Hallinger (2011). Content validity was established through expert review by five specialists, yielding IOC values of 0.80–1.00. Reliability was confirmed through a pilot test with 30 teachers, producing Cronbach's α coefficients of 0.917–0.936 (Nunnally & Bernstein, 1994).

6.4 Data Collection and Analysis

Data were collected via paper-based and online (WeChat-based) questionnaires over a four-week period. Incomplete and inconsistent responses were excluded prior to analysis. Statistical analysis was conducted using SPSS 26.0, encompassing: (1) descriptive statistics — mean, standard

deviation, skewness, and kurtosis; (2) Pearson's product-moment correlation analysis; and (3) multiple linear regression analysis. Mean scores were interpreted using the equal-interval classification: Very High (4.21–5.00), High (3.41–4.20), Moderate (2.61–3.40), Low (1.81–2.60), and Very Low (1.00–1.80) (Best & Kahn, 2006).

7. Results and Discussion

7.1 Descriptive Statistics

Analysis of 400 valid responses revealed that all four predictor variables were rated at a High level. Teacher Professional Competence received the

Variable	Mean	SD	Skewness	Kurtosis	Level
Leadership of School Administrators (X1)	3.59	0.85	-0.18	-0.35	High
Teacher Professional Competence (X2)	3.88	0.84	-0.12	-0.40	High
Instructional Resources (X3)	3.77	0.80	-0.09	-0.26	High
School Management Systems (X4)	3.69	0.79	-0.06	-0.31	High
Instructional Management Efficiency (Y)	2.79	0.84	-0.30	-0.28	Moderate

7.2 Pearson Correlation Analysis

Pearson correlation analysis revealed significant positive relationships between all predictor variables and the criterion variable (Table 3). Teacher Professional Competence had the strongest correlation

highest mean score ($M = 3.88$, $SD = 0.84$), followed by Instructional Resources ($M = 3.77$, $SD = 0.80$), School Management Systems ($M = 3.69$, $SD = 0.79$), and Leadership of School Administrators ($M = 3.59$, $SD = 0.85$). The criterion variable, Instructional Management Efficiency, scored at a Moderate level ($M = 2.79$, $SD = 0.84$). All skewness values ranged from -0.06 to -0.30 and kurtosis values from -0.26 to -0.40 , confirming normality assumptions (Hair et al., 2010). Full descriptive statistics are presented in Table 2.

with Instructional Management Efficiency ($r = 0.611$, $p < .01$), followed by Leadership of School Administrators ($r = 0.584$, $p < .01$), School Management Systems ($r = 0.360$, $p < .01$), and Instructional Resources ($r = 0.324$, $p < .01$). Inter-predictor correlations ranged from 0.58 to 0.68, all below the 0.70 multicollinearity threshold (Hair et al., 2010), confirming the absence of problematic multicollinearity.

Table 3. Pearson Correlation Matrix ($n = 400$)

Variable	X1	X2	X3	X4	Y	Sig.
X1: School Admin Leadership	1.00	.672*	.618*	.589*	.584*	<.001
X2: Teacher Prof. Competence	.672*	1.00	.603*	.641*	.611*	<.001
X3: Instructional Resources	.618*	.603*	1.00	.582*	.324*	<.001

Variable	X1	X2	X3	X4	Y	Sig.
X4: School Mgmt Systems	.589*	.641*	.582*	1.00	.360*	<.001
Y: Instruct. Mgmt Efficiency	.584*	.611*	.324*	.360*	1.00	<.001

Note. ** $p < .01$ (two-tailed).

7.3 Multiple Regression Analysis

Multiple linear regression was conducted in SPSS 26.0 to examine the joint predictive effects of the four variables on Instructional Management Efficiency. The overall model was significant: $R = 0.821$, $R^2 = 0.674$, Adjusted $R^2 = 0.670$, $F(4, 395) = 201.33$, $p < .001$, indicating that the four predictors collectively explained 67.4% of the variance in instructional management efficiency. Table 4 presents the regression coefficients.

H1 was supported: Leadership of School Administrators was the second strongest predictor ($\beta = 0.265$, $p < .001$), confirming Hallinger and Murphy's (1985) foundational argument that principals who actively define instructional goals, supervise teaching, and support teacher development produce more consistent school-wide efficiency. Performance monitoring ($M = 3.54$) was the dimension most in need of strengthening in Shangrao's primary schools.

H2 was supported: Teacher Professional Competence was the strongest predictor ($\beta = 0.277$, $p < .001$), consistent with Stronge (2018) and OECD (2022). A one-unit increase in teacher competence scores was associated with a 0.277-unit increase in instructional management efficiency. The relative weakness in personalised instruction ($M = 3.81$ vs. overall $M = 3.88$) identifies differentiated instruction as a high-leverage area for professional development.

H3 was supported: Instructional Resources had a significant but comparatively weaker effect ($\beta = 0.187$, $p < .001$). The relatively high resource mean ($M = 3.77$) alongside moderate efficiency ($M = 2.79$) suggests that basic resource adequacy has been reached but effective integration into instructional practice remains underdeveloped, consistent with Hoy and Miskel's (2013) systems perspective.

H4 was supported: School Management Systems was a significant predictor ($\beta = 0.214$, $p < .001$). Decision-making transparency ($M = 3.66$) scored lower than instructional policy clarity ($M = 3.72$), indicating that increasing teacher participation in governance is a practical priority, as supported by Colquitt et al. (2001) and Tschannen-Moran (2014).

8. Conclusion

All four factors — Teacher Professional Competence, Leadership of School Administrators, School Management Systems, and Instructional Resources — significantly and positively affect instructional management efficiency in Shangrao City's primary schools. The model explained 67.4% of variance ($R^2 = 0.674$), demonstrating strong explanatory power. A notable gap exists between the High-level scores of predictor variables and the Moderate-level efficiency score, indicating that the challenge is not resource scarcity but the effective integration and coordination of existing inputs.

Based on the specific conditions of Shangrao City's primary schools, four targeted policy recommendations are proposed:

(1) Teacher Professional Development. The Shangrao City Bureau of Education should establish a tiered professional development system aligned with the Ministry of Education's Teacher Education

Revitalisation Action Plan (2018-2022). Specific priorities for Shangrao include: city-funded workshops on differentiated instruction and formative assessment (addressing the identified gap at $M = 3.81$); peer mentoring programmes pairing experienced urban teachers with rural counterparts; and annual competency assessments tied to school-level recognition schemes.

(2) Leadership Capacity Building for School Administrators. Given that performance monitoring scored lowest among leadership dimensions in Shangrao schools ($M = 3.54$), the city's principal training programmes should be redesigned to explicitly target instructional supervision and ongoing feedback skills. Collaboration with Jiangxi Normal University or the Jiangxi Institute of Education to deliver structured principal mentoring and instructional rounds programmes is recommended.

(3) Improving Management System Transparency. Decision-making transparency scored the lowest among management system items ($M = 3.66$). Shangrao's primary schools should institutionalise Teacher Participation Committees with formal representation in school-level governance decisions — a mechanism already piloted in several Zhejiang province schools with documented gains in teacher organisational trust (Tschannen-Moran, 2014).

(4) Resource Integration and Rural Equity. Policymakers should establish city-level guidelines for equitable resource distribution across Shangrao's urban and rural schools, with particular attention to library resource relevance ($M = 3.73$) and off-campus resource utilisation ($M = 3.75$). Digital resource sharing platforms connecting urban and rural school networks represent a cost-effective strategy given

Jiangxi's existing e-government infrastructure.

Future research should employ longitudinal designs to track causal mechanisms, incorporate qualitative methods for contextual insight, and explore mediating variables such as teacher job satisfaction and organisational trust that may explain why strong resource conditions do not automatically produce high management efficiency.

9References

- Best, J. W., & Kahn, J. V. (2006). Research in education (10th ed.). Pearson Education.
- Bush, T. (2011). Theories of educational leadership and management (4th ed.). Sage Publications.
- Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O. L. H., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology*, 86(3), 425–445. <https://doi.org/10.1037/0021-9010.86.3.425>
- Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage Publications.
- Day, C., & Sachs, J. (2004). International handbook on the continuing professional development of teachers. Open University Press.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis (7th ed.). Pearson Prentice Hall.
- Hallinger, P. (2011). Leadership for learning: Lessons from 40 years of empirical research. *Journal of Educational Administration*, 49(2), 125–142.

- <https://doi.org/10.1108/09578231111116699>
- Hallinger, P., & Murphy, J. (1985). Assessing the instructional management behavior of principals. *The Elementary School Journal*, 86(2), 217-247.
<https://doi.org/10.1086/461445>
- Hoy, W. K., & Miskel, C. G. (2013). *Educational administration: Theory, research, and practice* (9th ed.). McGraw-Hill.
- Leithwood, K., & Jantzi, D. (2005). Transformational leadership. In B. Davies (Ed.), *The essentials of school leadership* (pp. 31-43). Sage Publications.
- Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning*. The Wallace Foundation.
- Ministry of Education of the People's Republic of China. (2018). *Teacher education revitalization action plan (2018-2022)*. People's Education Press.
- Ministry of Education of the People's Republic of China. (2019). *China education modernization 2035*. People's Education Press.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.
- OECD. (2016). *PISA 2015 results (Volume II): Policies and practices for successful schools*. OECD Publishing.
<https://doi.org/10.1787/9789264267510-en>
- OECD. (2022). *Education at a glance 2022: OECD indicators*. OECD Publishing.
<https://doi.org/10.1787/3197152b-en>
- Robinson, V. M. J. (2011). *Student-centered leadership*. Jossey-Bass.
- Rovinelli, R. J., & Hambleton, R. K. (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. *Dutch Journal of Educational Research*, 2, 49-60.
- Sergiovanni, T. J. (2009). *The principalship: A reflective practice perspective* (6th ed.). Pearson.
- Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and job resources as predictors of teacher motivation and well-being. *Social Psychology of Education*, 21(5), 1251-1275.
<https://doi.org/10.1007/s11218-018-9464-8>
- Stronge, J. H. (2018). *Qualities of effective teachers* (3rd ed.). ASCD.
- Tschannen-Moran, M. (2014). *Trust matters: Leadership for successful schools* (2nd ed.). Jossey-Bass.
- Yamane, T. (1973). *Statistics: An introductory analysis* (3rd ed.). Harper & Row.
- Zhu, C., Devos, G., & Li, Y. (2011). Teacher perceptions of school culture and leadership in China. *School Effectiveness and School Improvement*, 22(4), 395-417.
<https://doi.org/10.1080/09243453.2011.575100>

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