
THE IMPACT OF TEACHING MANAGEMENT OF TEACHERS ON STUDENT ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL IN YANGZHOU CITY, JIANGSU PROVINCE, CHINA

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Abstract

This research aim to 1) study the current status of Teaching Management of Teachers and Student Academic Achievement of Secondary School in Yangzhou, China, 2) examine the Impact of Teaching Management of Teachers on Student Academic Achievement of Secondary School in Yangzhou, China, and 3) propose guidelines for improving the Impact of Teaching Management of Teachers on Student Academic Achievement. The study employs a quantitative research methodology, utilizing survey questionnaires to collect data. The research subjects are the teachers and students of Secondary schools in Yangzhou City, Jiangsu Province, China. The sample size was determined using the Taro Yamane formula. A total of 335 valid questionnaires were collected, including 82 valid questionnaires from teachers and 253 valid questionnaires from students. Data analysis was conducted using statistical software methods, including reliability analysis, validity analysis, descriptive analysis, correlation analysis, and regression analysis. This study examines the role of teaching management of teachers in enhancing student academic achievement in secondary schools in Yangzhou, China. It explores the impact of key dimensions of teaching management of teachers—namely planning for teaching, classroom management, activity for learning, and evaluation for teaching—and student outcomes, including exam scores, learning attitudes, and study habits. Research results show that 1) teaching management of teachers has a positive impact on student academic achievement; 2) planning for teaching has a positive impact on student academic achievement; 3) classroom management has a positive impact on student academic achievement; 4) activity for learning has a positive impact on student academic achievement; 5) evaluation for teaching has a positive impact on student academic achievement, and the statistic significant for data analysis.

Keywords: Teaching Management, Academic Achievement, Secondary Education, Educational Improvement

Introduction

China's rapid socioeconomic transformation has placed immense pressure on its educational system to cultivate globally competitive talent (OECD, 2021). Consequently, improving the quality of secondary education has become a national priority. Within this context, cities across China have invested heavily in their schools. Yangzhou, a historically

prosperous city in Jiangsu Province, is a prime example, having increased its municipal fiscal expenditure on education at an annual rate of 11.2% over the past decade, with significant funds directed toward teacher recruitment, training, and retention (Yangzhou Municipal Bureau of Statistics, 2023). Despite these substantial investments, a persistent and troubling variation in student academic achievement remains across schools and districts. The 2023 Senior-High Entrance Examination (Zhongkao) results, for instance, reveal a stubborn 0.67 standard-deviation gap between the top- and bottom-performing public secondary schools in the city (Yangzhou Bureau of Education, 2023). This disconnect between increased resources and inconsistent outcomes raises a critical question: what school-level factors are most effective in translating investment into tangible student success?

A robust body of international research points to a powerful answer: teacher quality is the single most important within-school determinant of student achievement (Hanushek & Rivkin, 2023; Rivkin, Hanushek, & Kain, 2005). This quality, however, is not an inherent trait but is significantly shaped by a school's teaching management practices (Teaching Management of Teachers). A decade of meta-analyses confirms that integrated Teaching Management of Teachers strategies—encompassing selective hiring, structured induction, ongoing instructional feedback, and clear career pathways—can yield an average effect size of 0.18 standard deviations on student learning outcomes (Podolsky et al., 2023), nearly double the impact of isolated interventions.

While the global evidence for the importance of teacher management is compelling, its applicability to specific local contexts is not guaranteed. A significant gap exists in the literature. Most large-scale studies originate from Western nations or highly urbanized Asian mega-cities like Shanghai and Singapore (Barber & Mourshed, 2007; Podolsky et al., 2023). The dynamics of mid-sized Chinese cities, which possess a unique blend of urban, suburban, and rural characteristics, remain largely under-examined. In China, existing studies have often focused on macro-policy levels or rural, less-developed areas (Liu & Zhao, 2021; Zhang, Wang & Nie, 2022), leaving the specific mechanisms within economically developing, medium-sized cities unclear. Furthermore, qualitative work warns that "best-practice" management models may lose potency when imported into collectivist cultures that prize harmony over individual accountability (Salleh & Gurr, 2020). This creates a paradox: the most policy-relevant evidence for a city like Yangzhou may be the least context-validated. There is a clear absence of empirical research that quantitatively examines the relationship between a comprehensive set of teacher management practices and student achievement in China's non-tier-1 cities.

This study addresses this critical knowledge gap. Its primary purpose is to systematically investigate the impact of teaching management of teachers on the academic achievement of secondary school students in Yangzhou, China. It aims to move beyond a single-factor analysis by examining a holistic model of teacher management. The study conceptualizes Teaching Management of Teachers across four core dimensions—planning for teaching, classroom management, activity for learning, and evaluation for teaching—and assesses student academic achievement through three key indicators: exam scores, learning attitude, and learning habits. By employing a quantitative methodology with data collected from 335 teachers and students, this research seeks to: (1) delineate the current status of these practices and outcomes, (2) empirically test the predictive power of each management dimension on student achievement, and (3) propose evidence-based guidelines for improvement. The findings will provide localized evidence to inform educational policy and

practice, not only for Yangzhou but also for the myriad of similar cities navigating the complex path toward educational excellence and equity in contemporary China.

Research Objectives

1. To study the current status of Teaching Management of Teachers and Student Academic Achievement of Secondary School in Yangzhou, China
2. To examine the impact of Teaching Management of Teachers on Student Academic Achievement of Secondary School in Yangzhou, China
3. To propose guidelines for improving the Teaching Management of Teachers and Student Academic Achievement

Conceptual Framework

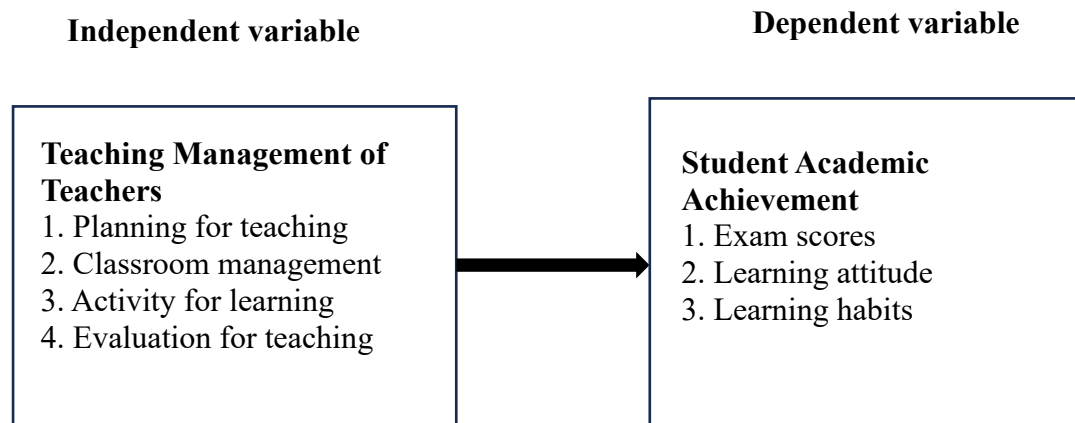


Figure 1 Conceptual Framework Diagram

Hypotheses

- H1: Teaching management of teachers has a positive impact on student academic achievement.
- H2: Planning for teaching has a positive impact on student academic achievement.
- H3: Classroom management has a positive impact on student academic achievement.
- H4: Activity for learning has a positive impact on student academic achievement.
- H5: Evaluation for teaching has a positive impact on student academic achievement.

Research Methodology

This study employs a quantitative research approach to systematically investigate the impact of teaching management of teachers on student academic achievement in secondary schools in Yangzhou, China. Quantitative methods enable objective, measurable, and generalizable findings through statistical analyses (Creswell & Creswell, 2018). The following sections detail the population, sampling procedures, research instruments, data collection protocols, and analytical strategies employed in this investigation.

Population and Sample

The target population for this study comprised secondary school teachers and students in Guangling District, Yangzhou City, Jiangsu Province, China. Specifically, the teacher population consisted of 103 professional teaching personnel engaged in instructional work

across middle schools in Yangzhou, while the student population comprised 688 students enrolled in these secondary schools. The total population was 791 individuals. These participants were selected because teaching management of teachers constitutes a crucial component of the educational process with significant impact on student academic achievement, and studying this relationship in Yangzhou's secondary schools can reveal the important role of teacher management in improving students' academic performance.

Six secondary schools within Guangling District were selected as research sites, representing diverse institutional characteristics including public and private schools, junior and senior secondary stages, urban and suburban locations, and varying performance levels. These schools were anonymized to protect privacy and adhere to academic ethics.

This study employed stratified random sampling to ensure representativeness across key structural characteristics of the population. First, the target population was stratified based on school type (public versus private, urban versus suburban) and educational stage (junior secondary grades 7–9 versus senior secondary grades 10–12). Subsequently, random sampling was conducted within each stratum. This approach was selected because it minimizes selection bias, enhances sample representativeness, and ensures that the sample accurately reflects the diversity and characteristics of the entire population, thereby allowing for generalizable findings.

In this study, the sample size was determined using the Taro Yamane formula, which is widely used in educational research to calculate the required sample size for a given population. This method was chosen because it provides a straightforward and effective way to ensure the sample is representative of the population. This calculation ensures that the sample size is neither too large nor too small, providing an optimal balance between statistical accuracy and practical feasibility. The final sample consisted of 335 valid questionnaires: 82 from teachers and 253 from students.

Research Instrument

The primary research instrument was the "Teaching Management of Teachers and Student Academic Achievement Survey," specifically developed to collect quantitative data on the key variables under investigation. The instrument was designed in two parallel versions to ensure comprehensive data collection from both educator and learner perspectives.

Teacher Version: Focused on the independent variable (Teaching Management of Teachers), this version was structured into four main sections corresponding to the core dimensions: Planning for Teaching, Classroom Management, Activity for Learning, and Evaluation for Teaching. Additionally, a brief section assessed teachers' perceptions of student examination performance to capture the cognitive dimension of student academic achievement.

Student Version: Focused on the dependent variable (Student Academic Achievement), this version was structured to capture student perceptions of teaching management practices across the same four dimensions, alongside self-reported indicators of academic achievement including Learning Attitude and Learning Habits.

Both versions predominantly utilized 5-point Likert scales ranging from (1) "Strongly Disagree" to (5) "Strongly Agree" to ensure consistency across items, facilitate quantitative analysis, and enhance the reliability and comparability of responses. The items were developed based on a comprehensive review of established theoretical constructs—including Classroom Management Theory, Social Support Theory, and Teacher Effectiveness & Value-Added Theory—and prior empirical studies in educational management and psychology.

Content validity was established through expert review using the Index of Item-Objective Congruence (IOC = 1.0 for all items), while reliability was confirmed through pilot testing with Cronbach's alpha coefficients exceeding 0.90 for both versions.

Data Collection

Data collection was conducted from July 2025 to January 2026 following rigorous ethical and procedural protocols. Ethical approval was obtained from the Rattana Bundit University Institutional Review Board, with formal permissions secured from the Yangzhou Municipal Bureau of Education and school principals.

The "Teaching Management of Teachers and Student Academic Achievement Survey" was administered through the Wenjuanxing online platform. Unique survey links and QR codes were distributed via official school communication channels (teacher WeChat groups and class parent groups). The platform enforced mandatory response settings to prevent missing data and blocked multiple submissions from the same device.

Participants completed the survey at their convenience within a two-week period. Clear instructions on the first page reiterated research purposes, assured anonymity, and emphasized honest responses. Average completion time was 8-10 minutes for students and 6-8 minutes for teachers. The researcher monitored response rates in real-time and sent reminder messages midway to encourage participation.

All data were encrypted on Wenjuanxing's secure servers. The final dataset of 335 valid responses (82 teachers and 253 students) was exported directly into statistical software after automated screening for straight-lining and unrealistic completion times. No invalid cases were identified, confirming high data quality for subsequent analysis.

Data Analysis

Data were analyzed using statistical software following a systematic, multi-stage protocol. The analysis progressed through four sequential stages:

Data Preparation and Screening

The raw data exported from the Wenjuanxing platform were checked for completeness and consistency. Reverse-scored items were aligned, and composite variables were calculated for overall teaching management (TMC) and overall student academic achievement (SAAC). No missing data exceeded 5% per item; mean imputation was employed where necessary.

Reliability and Validity Assessment

Internal consistency was verified using Cronbach's alpha. Results confirmed excellent reliability: teacher questionnaire $\alpha = 0.929$ (14 items, $N = 82$); student questionnaire $\alpha = 0.915$ (16 items, $N = 253$). Content validity was established through expert review with Index of Item-Objective Congruence (IOC = 1.0 for all items).

Descriptive Statistical Analysis

Frequencies, percentages, means, and standard deviations were calculated to summarize demographic characteristics and describe the current status of teaching management practices and student academic achievement (addressing Research Objective 1).

Inferential Statistical Analysis

Pearson Correlation Analysis was conducted to examine the strength and direction of linear relationships between teaching management dimensions and student achievement indicators (addressing Research Objective 2 and testing Hypotheses H2–H5). Coefficients were interpreted as: ± 0.10 – ± 0.29 (small), ± 0.30 – ± 0.49 (moderate), ± 0.50 – ± 1.0 (large).

Multiple Linear Regression Analysis was employed to identify significant predictors of student academic achievement while controlling for other management components. Separate models were run for each dependent variable (Exam Scores, Learning Attitude, Learning Habits), with four teaching management dimensions as independent predictors. Key outputs included R^2 , adjusted R^2 , standardized beta coefficients (β), and significance tests.

Multiple Linear Regression was performed to test Hypothesis H1, with Teaching Management Composite predicting Student Achievement Composite. Model fit indicators (R^2 , F-statistic, β) and assumption checks (normality, linearity, homoscedasticity, Durbin–Watson) were reported.

All analyses used a significance level of $\alpha = 0.05$.

Research Results and Discussion

This section presents the key findings of the study, structured according to the research objectives and hypotheses. The results are derived from the analysis of 335 valid questionnaires (82 teachers, 253 students) collected from secondary schools in Yangzhou, China. Following the presentation of results, a detailed discussion interprets these findings in the context of existing literature and theoretical frameworks.

Research Results

1. Current Status of Teaching Management of Teachers and Student Academic Achievement (Objective 1)

Descriptive statistics were employed to portray the current state of the key variables. As shown in Table 1, secondary school teachers in Yangzhou rate their own teaching management practices positively. All four core dimensions have mean scores in the upper-middle range of the 5-point Likert scale (3.62 to 3.71). "Activity for Learning" received the highest rating ($M = 3.71$), while "Evaluation for Teaching" scored the lowest, though still positive ($M = 3.62$). The standard deviations (0.83 to 0.98) indicate some variability among teachers, particularly in the design of learning activities.

Table 1: Descriptive Statistics for Teaching Management of Teachers ($N=82$)

Dimension	Mean	S.D.
Planning for Teaching	3.65	0.83
Classroom Management	3.68	0.89
Activity for Learning	3.71	0.98
Evaluation for Teaching	3.62	0.86

Regarding student academic achievement (Table 2), teachers perceive noticeable progress in their students' exam scores ($M = 3.75$). Students themselves report a highly positive learning attitude ($M = 3.80$) and sound learning habits ($M = 3.68$). The low standard deviations suggest a relatively consistent and positive trend across the student sample.

Table 2: Descriptive Statistics for Student Academic Achievement

Dimension	N	Mean	S.D.
Exam Scores	82	3.75	0.88
Learning Attitude	253	3.80	0.90
Learning Habits	253	3.68	0.87

These findings for Objective 1 establish that teachers in Yangzhou generally implement systematic and proactive management practices, while students exhibit positive development across cognitive, affective, and behavioral dimensions of learning.

2. The Impact of Teaching Management of Teachers on Student Academic Achievement (Objective 2 & Hypotheses H1-H5)

To test the research hypotheses, a series of correlation and regression analyses were conducted. First, a linear regression was used to test the overall hypothesis (H1). A "Teaching Management of Teachers Composite" was created by averaging the four teacher-management dimensions, and a "Student Academic Achievement Composite" was created by averaging the three student-achievement dimensions.

Table 3: Linear Regression Analysis for Composite Variables

Model	R	R ²	Adj. R ²	F(1, 333)	β (Std.)	t	p
1	0.72	0.518	0.516	358.42	0.72	18.93	<0.001

As presented in Table 3, the overall Teaching Management of Teachers Composite has a strong, statistically significant positive impact on the Student Academic Achievement Composite ($\beta = 0.72$, $p < .001$), explaining 51.8% of the variance ($R^2 = 0.518$). This result provides robust support for Hypothesis H1.

Subsequently, multiple regression analyses were performed to examine the specific impacts of each teacher management dimension on the different facets of student achievement, testing Hypotheses H2 through H5. A summary of the key regression models is presented in Table 4.

Table 4: Summary of Regression Analyses for Hypotheses H₂-H₅

Hypothesis	Independent Variable	Dependent Variable	R ²	β (Unstd.)	β (Std.)	t	p	Result
H ₂	Planning for Teaching	Exam Scores	0.400	0.664	0.632	7.303	<.001	Supported
H ₃	Classroom Management	Learning Attitude	0.372	0.678	0.610	12.107	<.001	Supported

Hypothesis	Independent Variable	Dependent Variable	R ²	β (Unstd.)	β (Std.)	t	p	Result
H ₃	Classroom Management	Learning Habits	0.354	0.593	0.595	8.727	<.001	Supported
H ₄	Activity for Learning	Learning Attitude	0.526	0.741	0.725	16.841	<.001	Supported
H ₄	Activity for Learning	Learning Habits	0.473	0.680	0.688	15.107	<.001	Supported
H ₅	Evaluation for Teaching	Learning Attitude	0.438	0.718	0.662	13.985	<.001	Supported
H ₅	Evaluation for Teaching	Learning Habits	0.494	0.737	0.703	14.193	<.001	Supported

Discussion

The results of this study provide a clear and detailed picture of the impact of teaching management of teachers on student academic achievement in Yangzhou's secondary schools, successfully localizing and extending global educational management theories.

First, the descriptive findings (Objective 1) paint an encouraging portrait of current practice. The high self-ratings across all four teacher management dimensions (Table 1) reflect the positive outcomes of Yangzhou's sustained investment in education and teacher development (Yangzhou Municipal Bureau of Statistics, 2023). This suggests that recent policy initiatives, such as the "Double Reduction" policy, are effectively guiding teachers toward more student-centered and process-oriented practices (Ministry of Education of the People's Republic of China, 2021). The relatively lower, though still positive, score for "Evaluation for Teaching" highlights a specific area for future professional development—transforming assessment from a mere judgment tool into a more powerful tool for learning (Black & Wiliam, 2018). Correspondingly, the positive student outcomes in exam scores, attitude, and habits (Table 2) indicate a healthy and holistic academic development among students, transcending a narrow focus on test scores and aligning with modern educational goals that emphasize comprehensive competencies (Hu & Xu, 2025; Tomlinson, 2017).

Second, the confirmation of Hypothesis H1 (Table 3) provides robust empirical validation for the central role of teachers as the most critical in-school factor influencing student success. The finding that an integrated system of teacher management practices explains 51.8% of the variance in student achievement powerfully echoes the global consensus established by researchers like Hanushek & Rivkin (2010) and Podolsky et al. (2023). It moves the conversation from whether teacher management matters to how it matters in the specific context of a medium-sized Chinese city.

The most insightful findings, however, come from the differentiated impact pathways revealed in testing H2-H5 (Table 4). These results delineate a synergistic "management ecosystem" with distinct functions:

The Academic Drivers (H2 & H3): The strong predictive power of Classroom Management and Activity for Learning on exam scores (Table 4) confirms that an orderly, engaging, and interactive classroom environment is foundational for academic achievement. This aligns with Marzano's (2003) emphasis on the interplay between management and learning, and Kounin's (1970) classic work on group management, which highlighted that

effective management maximizes time-on-task and, consequently, learning. Teachers who excel in these areas create the conditions for deep cognitive engagement with the material.

The Motivational Catalysts (H4 & H5): The exceptionally strong impact of Activity for Learning and Evaluation for Teaching on Learning Attitude (Table 4) is a particularly powerful finding. It demonstrates that students' intrinsic motivation is most effectively ignited by engaging, real-world learning experiences (Activity for Learning) and by timely, constructive feedback that helps them see their own progress (Evaluation for Teaching). This provides strong empirical support from a Chinese context for Pekrun's (2006) Control-Value Theory of Achievement Emotions, which posits that positive academic emotions (like enjoyment and interest) are fostered when students perceive a task as valuable and feel a sense of control over their learning. High-quality activities and supportive feedback directly enhance these perceptions of value and control.

The Behavioral Architects (H4 & H5): The equally powerful influence of Activity for Learning and Evaluation for Teaching on Learning Habits (Table 4) reveals how good study routines are cultivated. Participatory activities inherently require students to plan, collaborate, and reflect, while effective assessment (like error analysis and specific feedback) guides them in self-monitoring and metacognition (Zimmerman, 2019). Over time, these structured external demands become internalized, self-regulated behaviors, transforming students into more independent and effective learners.

In conclusion, this study's findings provide a valuable, evidence-based "action map" for educators in Yangzhou and beyond. It confirms that improving student achievement is not about a single, magical solution, but about systematically strengthening a set of interconnected teacher management practices. By clarifying which specific levers (planning, management, activities, evaluation) most strongly influence which specific student outcomes (scores, attitudes, habits), the research empowers school leaders and teachers to move from experience-based intuition to precision-based, data-informed strategies for educational improvement.

Research Suggestions

This study provides empirical evidence that teaching management of teachers exerts a significant positive impact on student academic achievement in secondary schools in Yangzhou, China. The key findings demonstrate that: (1) teaching management of teachers practices are implemented at relatively high levels across all four dimensions; (2) the overall teaching management of teachers composite strongly predicts student academic achievement composite ($r = 0.72$, $p < 0.01$, $R^2 = 0.518$); and (3) different management dimensions show differentiated effects—classroom management and activity for learning most strongly predict exam scores ($\beta = 0.733$ and 0.719), while activity for learning and evaluation for teaching most significantly influence learning attitude ($\beta = 0.725$ and 0.662) and learning habits ($\beta = 0.688$ and 0.703).

Implications for Educational Practice

For school administrators, the findings suggest implementing "precision empowerment" professional development programs that target specific high-leverage practices rather than generic training. Teacher performance evaluation systems should balance process indicators—such as lesson plan quality, classroom management effectiveness, and assessment feedback practices—with outcome measures to motivate continuous improvement.

For frontline teachers, the results highlight prioritizing four empirically validated practices: deepening backward design habits in instructional planning, honing positive

behavioral support strategies in classroom management, designing immersive and engaging learning activities, and practicing assessment for learning through tiered assignments and timely feedback.

For regional education authorities, the study recommends developing evidence-based teaching management toolkits, establishing incentive funds for innovation in high-impact practices, and creating data platforms for dynamic monitoring and evidence-based governance.

Directions for Future Research

First, longitudinal designs are needed to examine causal relationships and long-term effects of teaching management on student academic trajectories. Tracking cohorts over multiple years would clarify sustained impacts and potential threshold effects.

Second, comparative studies across diverse contexts—other cities in Jiangsu Province, different regions in China, or international settings—would test the generalizability of findings and identify culturally specific moderating factors.

Third, research should investigate synergistic mechanisms and optimal combination effects among the four management dimensions to provide integrated improvement solutions rather than isolated interventions.

Fourth, subject-specific management strategies warrant examination, as different academic disciplines may require tailored approaches to planning, activity design, and assessment.

Finally, design-based research paradigms involving collaborative innovation between researchers, teachers, and administrators would generate more contextually grounded knowledge while directly empowering daily educational practice.

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