

Academic Leadership and Learning Effectiveness of Students at Yinhai Sanya High School in Nanning

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Abstract: The objectives of this research were 1) to examine the academic leadership of administrators at Yinhai Sanya High School in Nanning, China; 2) to examine the learning effectiveness of students at the school; and 3) to investigate the relationship between administrators' academic leadership and students' learning effectiveness. The sample consisted of 186 teachers and administrators purposively selected from a population of 360. The research instrument was a five-point Likert-scale questionnaire comprising 30 items across 10 dimensions of academic leadership and 20 items across three dimensions of learning effectiveness. The data were analyzed using descriptive statistics and Pearson's correlation coefficient. The findings revealed that: 1) the overall level of academic leadership was moderate ($M = 3.406$), with shared academic vision receiving the highest mean score ($M = 3.548$) and data-informed decision-making the lowest ($M = 3.294$); 2) the overall level of students' learning effectiveness was moderate ($M = 3.342$), with academic performance receiving the highest mean score ($M = 3.353$) and learning strategies the lowest ($M = 3.329$); and 3) all dimensions of academic leadership were significantly and positively correlated with all dimensions of students' learning effectiveness ($p < .01$). The strongest correlations were found between curriculum leadership and academic performance ($r = .467$), innovation support and academic performance ($r = .443$), and innovation support and learning strategies ($r = .432$).

Keywords: academic leadership; learning effectiveness; private senior high school; China

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1. Background and Significance of Research

Over the past two decades, educational reform has shifted from expanding access to education toward improving quality. Enhancing students' learning quality and promoting holistic development have become global priorities. Consequently, educational quality is no longer evaluated solely by academic achievement but through a broader perspective incorporating learning processes, experiences, and outcomes^[3]. Within this context, learning effectiveness has emerged as a central indicator, reflecting students' overall learning outcomes including knowledge acquisition, engagement, learning strategies, and higher-order thinking skills^[4]. The growing emphasis on quality has expanded the role of school leaders beyond administration. Academic leadership

directly supports instructional quality, teacher development, and student outcomes^{[1][2]}. Empirical studies confirm its association with educational improvement through multiple pathways^[5]. China's Outline for Building a Leading Country in Education (2024-2035) emphasizes strengthening school governance and leadership capacity^[15]. These challenges are particularly significant for private senior high schools, which operate in highly competitive markets where reputation directly affects enrollment.

1.1. Research Status and Research Gaps

Academic leadership has been widely studied internationally, with Hallinger^[1] conceptualizing instructional leadership as a core driver of school improvement, Robinson, Lloyd, and Rowe^[5] demonstrating that leadership focused on teaching and learning produces greater effects on student outcomes than administrative leadership, and Leithwood, Harris, and Hopkins^[2] confirming that school leadership is second only to classroom teaching in influencing student achievement. In China, Zhong, Zheng, and Li^[6] identified "Instruction and Curriculum" as the most foundational leadership component, while Liu, Li, and Huang^[7] and Wu^[8] found positive associations between instructional leadership and teacher self-efficacy, student performance, and achievement through teacher collaboration. Despite these findings, research on academic leadership in Chinese private senior high schools remains limited, with few studies examining how specific leadership dimensions relate to learning engagement, strategies, and performance in this context. This study addresses that gap by investigating the relationship between academic leadership and learning effectiveness at Yinhai Sanya High School in Nanning, China.

1.2. Research Questions

What is the academic leadership of administrators at Yinhai Sanya High School, Nanning, China? What is the students' learning effectiveness at Yinhai Sanya High School, Nanning, China? What is the relationship between academic leadership of administrators and students' learning effectiveness at Yinhai Sanya High School, Nanning, China?

1.3. Research Objectives

To examine the academic leadership of administrators at Yinhai Sanya High School in Nanning, China. To examine the students' learning effectiveness at Yinhai Sanya High School in Nanning, China. To investigate the relationship between academic leadership of administrators and students' learning effectiveness at Yinhai Sanya High School in Nanning, China.

2. Conceptual Framework

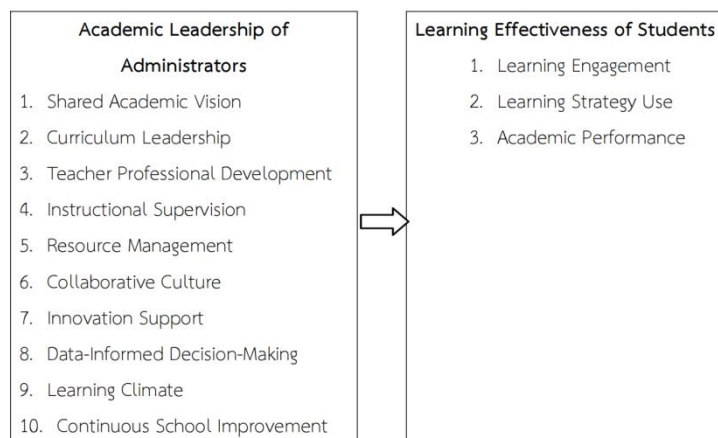


Figure 1. Conceptual Framework

Academic Leadership of Administrators -Construction of shared academic vision - Curriculum leadership and curriculum implementation management -Support for teachers' professional development -Classroom teaching supervision and instructional inspection -Rational allocation of teaching and educational resources -Cultivation of collaborative academic and research culture -Encouragement and incentive for teaching innovation -Data-informed academic decision-making -Construction of positive campus learning climate -Mechanism for continuous improvement of teaching quality Learning Effectiveness of Students -Learning engagement - Learning strategy use -Academic performance

3. Expected Benefits

1. Benefits to teachers: The findings provide teachers with a clearer understanding of how academic leadership practices influence student learning effectiveness, which may inform their instructional decisions and professional development efforts. Teachers may also benefit from more explicit strategy instruction and professional learning opportunities as administrators strengthen innovation support and instructional supervision. 2. Benefits to school administrators: Administrators gain empirical evidence to identify priority areas for leadership development, particularly in data-informed decision-making, resource allocation, and innovation support. The findings also offer a preliminary diagnostic framework for self-evaluation and continuous school improvement. 3. Benefits to schools: The questionnaire offers a preliminary tool for school self-evaluation and improvement planning. The school can use the findings to strengthen leadership practices that most strongly correlate with student outcomes, ultimately enhancing overall school effectiveness and competitiveness.

4. Literature Review

4.1. Connotation and Value of Academic leadership

Academic leadership refers to a series of targeted, teaching-centered leadership behaviors implemented by school administrators to advance instructional quality and promote students' comprehensive learning development ^[1]. Unlike traditional administrative governance, which focuses on routine school operations, academic leadership takes teaching and learning as the core of all school work. A well-established academic leadership system can enhance instructional quality, foster teacher collaboration, and improve student learning outcomes^[2]. Constructivist learning theory suggests that students actively construct knowledge through interaction with learning tasks and environments^[9].

4.2. Core Dimensions of Academic leadership and Learning Effectiveness

This study conceptualizes two core variables with their respective dimensions. Academic Leadership of Administrators consists of ten dimensions: Construction of Shared Academic Vision, Curriculum Leadership and Curriculum Implementation Management, Support for Teachers Professional Development, Classroom Teaching Supervision and Instructional Inspection, Rational Allocation of Teaching and Educational Resources, Cultivation of Collaborative Academic and Research Culture, Encouragement and Incentive for Teaching Innovation, Data-Informed Academic Decision-Making, Construction of Positive Campus Learning Climate, and Mechanism for Continuous Improvement of Teaching Quality ^[1] ^[2] ^[12]. Learning Effectiveness of Students consists of three dimensions: Learning Engagement^[13], Learning Strategies^{[10][11]}, and Academic Performance ^[4].

4.3. Research on the Relationship between Academic Leadership and Learning Effectiveness

Previous empirical studies have consistently demonstrated that academic leadership is associated with educational improvement through multiple pathways. Robinson, Lloyd, and Rowe^[5] found that leadership practices directly associated with teaching and learning produce significantly greater effects on student outcomes than administrative leadership. Leithwood, Harris, and Hopkins^[2] confirmed that the positive effect of academic leadership on learning effectiveness is mediated by teacher collaboration, instructional coherence, and positive school climate. In the Chinese context, Zhong, Zheng, and Li^[6] identified "Instruction and Curriculum" as the most foundational leadership component. Liu, Li, and Huang^[7] found positive associations between shared instructional leadership and both teacher self-efficacy and student academic performance. Wu^[8] demonstrated that instructional leadership predicts achievement through teacher collaboration, with stronger effects when teachers perceive support for innovation. Despite these findings, research on academic leadership in Chinese private senior high schools remains limited.

5. Methodology

5.1. Research Design

This study employed a quantitative correlational research design to examine the relationship between academic leadership of administrators and learning effectiveness of students at Yin Hai Sanya High School in Nanning, China. A correlational design was appropriate as the study aimed to identify the direction and strength of relationships between variables without manipulating any conditions. Descriptive statistics were used to summarize the current status of both academic leadership and learning effectiveness, while inferential statistics (Pearson correlation) were applied to test the hypothesized relationships between the two sets of variables.

5.2. Research Participants

The population of this study consisted of all teachers and administrative staff at Yin Hai Sanya High School in Nanning, China, with a total of 360 individuals. This included school administrators, grade directors, teaching research group leaders, and subject teachers.

A purposive sampling method was employed. The selection criteria required participants to have held their teaching or administrative position for at least one year at the target school, ensuring they had sufficient experience to perceive leadership practices and student outcomes. The final sample of 186 represented 51.7% of the total population (360), which was considered adequate for descriptive and correlational analyses. Of the 186 distributed questionnaires, all were completed and returned, yielding a response rate of 100% due to on-site administration during working hours. The remaining 174 eligible staff members were not included in the final sample because the study purposively focused on teachers and administrators actively involved in daily instruction and school management. The sample included respondents from different administrative positions, teaching subjects, and levels of teaching experience.

5.3. Research Instruments

A three-part questionnaire was developed as the primary research instrument, drawing on established theoretical frameworks and validated scales from previous studies. Part 1: Basic Information of Respondents collected demographic data including gender, age range, years of teaching experience, current position, and subject area taught. This information helped describe the sample and allowed for subgroup comparisons if needed. Part 2: Academic Leadership of Administrators contained 30 items measuring the ten dimensions of academic leadership, with three

items per dimension. The items were developed based on Hallinger's Leadership for Learning framework^[1] and related work by Leithwood et al.^[2], Bush^[14], Day et al.^[12], and Robinson et al.^[5]. Respondents indicated their level of agreement with statements describing administrators' leadership behaviors using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Part 3: Learning Effectiveness of Students contained 20 items measuring the three dimensions of learning effectiveness: learning engagement (6 items), learning strategies (8 items), and academic performance (6 items). Item development was guided by the conceptualizations of Biggs and Tang^[4] and work on student engagement by Fredricks et al.^[13] and self-regulated learning by Zimmerman^[10]. Teachers rated their perceptions of students' learning behaviors and outcomes using the same five-point Likert scale. The questionnaire was prepared in Chinese, the native language of all respondents, to ensure clarity and accurate interpretation of items. It is important to note that this study measured teachers' perceptions of student learning effectiveness based on their daily classroom observations, rather than objective academic records such as examination scores.

5.4. Validity and Reliability

Content validity was examined through expert review by three specialists in educational administration, with the Index of Item-Objective Congruence (IOC) calculated. Items with IOC values of 0.50 or higher were retained. A pilot study was conducted with 30 teachers to test item clarity and instrument reliability. Reliability was assessed using Cronbach's alpha, yielding = 0.91 for Academic Leadership and = 0.87 for Learning Effectiveness, both exceeding the acceptable threshold of 0.70. Reliability was also computed for each subscale. For the ten academic leadership dimensions, Cronbach's values ranged from 0.804 to 0.861; for the three learning effectiveness dimensions, values ranged from 0.893 to 0.918. All subscales exceeded the acceptable threshold of 0.70, indicating strong internal consistency. The IOC values for all items ranged from 0.67 to 1.00, indicating acceptable content validity. Based on expert feedback, minor wording revisions were made to three items for clarity. The 30 pilot respondents were excluded from the final sample to prevent response bias. Due to the exploratory nature of this study and the established theoretical framework, confirmatory factor analysis was not performed; however, future research should consider structural validity testing. It is noteworthy that the overall Cronbach's alpha for Learning Effectiveness (= 0.87) is slightly lower than the alpha values of its three subscales. This is a statistically plausible phenomenon, likely because the three subscales measure distinct but interrelated aspects of learning effectiveness (engagement, strategies, and performance), and their inter-correlations are moderate (ranging from $r = .294$ to $r = .402$, as shown in Table 3). Despite this, the overall scale demonstrates good internal consistency, exceeding the acceptable threshold of 0.70.

5.5. Data Collection

Questionnaires were distributed to 186 respondents during regular working hours and collected immediately after completion. No identifying information was recorded to ensure anonymity and honest responses. Questionnaires with more than 10% missing responses were excluded.

5.6. Data Analysis Methods

Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize demographic characteristics and variable levels. Pearson correlation coefficients were computed to examine relationships between academic leadership dimensions and learning effectiveness dimensions, with significance assessed at 0.01 for the reported correlation matrix. Mean scores were interpreted using the following criteria: 4.51-5.00 = Very High; 3.51-4.50 = High; 2.51-3.50 = Moderate; 1.51-2.50 = Low; 1.00-1.50 = Very Low. A limitation of this study is that all

variables were rated by the same respondents in a single questionnaire, which may introduce common method bias. Future research should include multiple informants and objective measures to triangulate the findings. In addition, the correlation matrix involved 30 separate tests, which may increase the risk of Type I error. Future research should apply multiple comparison adjustments such as Bonferroni or Benjamini-Hochberg to address this issue.

6. Findings

6.1. Academic Leadership of Administrators

Table 1. Descriptive Statistics of Academic Leadership Dimensions

Dimension	Mean	SD	Level
Construction of Shared Academic Vision	3.548	0.970	High
Cultivation of Collaborative Academic and Research Culture	3.489	0.949	Moderate
Mechanism for Continuous Improvement of Teaching Quality	3.450	1.035	Moderate
Curriculum Leadership and Curriculum Implementation Management	3.427	1.034	Moderate
Support for Teachers' Professional Development	3.398	0.970	Moderate
Construction of Positive Campus Learning Climate	3.384	0.954	Moderate
Classroom Teaching Supervision and Instructional Inspection	3.382	0.997	Moderate
Encouragement and Incentive for Teaching Innovation	3.328	0.983	Moderate
Rational Allocation of Teaching and Educational Resources	3.326	1.013	Moderate
Data-Informed Academic Decision-Making	3.294	1.030	Moderate
Overall Academic Leadership	3.406	—	Moderate

The overall level of academic leadership was perceived at a moderate level ($M = 3.406$). Among the ten dimensions, Construction of Shared Academic Vision scored highest ($M = 3.548$), followed by Cultivation of Collaborative Academic and Research Culture ($M = 3.489$) and Mechanism for Continuous Improvement of Teaching Quality ($M = 3.450$). Data-Informed Academic Decision-Making scored lowest ($M = 3.294$), falling into the Moderate range.

6.2. Learning Effectiveness of Students

Table 2. Learning Effectiveness of Students

Dimension	Mean	SD	Level
Learning Engagement	3.345	0.913	Moderate
Learning Strategies	3.329	0.896	Moderate
Academic Performance	3.353	0.930	Moderate
Overall Learning Effectiveness	3.342	—	Moderate

The overall level of learning effectiveness was perceived at a moderate level. Academic Performance scored highest ($M = 3.353$), followed closely by Learning Engagement ($M = 3.345$), while Learning Strategies scored lowest ($M = 3.329$).

6.3. Correlation Analysis

Table 3. Correlation Matrix of Academic Leadership and Learning Effectiveness

Academic Leadership Dimension	Learning Engagement	Learning Strategies	Academic Performance
Construction of Shared Academic Vision	.334**	.403**	.424**
Curriculum Leadership and Curriculum Implementation Management	.385**	.426**	.467**
Support for Teachers' Professional Development	.386**	.351**	.399**
Classroom Teaching Supervision and Instructional Inspection	.398**	.428**	.380**
Rational Allocation of Teaching and Educational Resources	.402**	.387**	.372**
Cultivation of Collaborative Academic and Research Culture	.291**	.289**	.366**
Encouragement and Incentive for Teaching Innovation	.224**	.432**	.443**
Data-Informed Academic Decision-Making	.242**	.261**	.310**
Construction of Positive Campus Learning Climate	.317**	.333**	.276**
Mechanism for Continuous Improvement of Teaching Quality	.281**	.374**	.333**

Note. ** $p < .01$.

All ten dimensions of academic leadership showed significant positive correlations with all three dimensions of learning effectiveness ($p < .01$). Among the stronger correlations were Curriculum Leadership and Academic Performance ($r = .467$), Innovation Support and Academic Performance ($r = .443$), Innovation Support and Learning Strategies ($r = .432$), and Instructional Supervision and Learning Strategies ($r = .428$). The weakest correlations were between Learning Engagement and Innovation Support ($r = .224$) and Learning Engagement and Data-Informed Decision-Making ($r = .242$), though these were still significant.

6.4. Summary of Research Results

First, the overall level of academic leadership was perceived at a moderate level ($M = 3.406$), with Construction of Shared Academic Vision scoring highest ($M = 3.548$) and Data-Informed Academic Decision-Making scoring lowest ($M = 3.294$). Second, the overall level of learning effectiveness was perceived at a moderate level, with Academic Performance scoring highest ($M = 3.353$) and Learning Strategies scoring lowest ($M = 3.329$). Third, all ten dimensions of academic leadership showed significant positive correlations with all three dimensions of learning effectiveness ($p < .01$), indicating that academic leadership is positively associated with student learning outcomes.

Conclusion

7.1. Research Findings

This study examined the relationship between academic leadership and learning effectiveness at Yinhai Sanya High School. Three main findings emerged from the data analysis. First, the overall level of academic leadership was perceived at a moderate level ($M = 3.406$). Among the ten dimensions, Construction of Shared Academic Vision scored highest ($M = 3.548$), while Data-Informed Academic Decision-Making scored lowest ($M = 3.294$). This pattern suggests that administrators were rated more highly in articulating a clear academic vision and fostering collaboration, while data use, resource allocation, and innovation support received comparatively lower ratings. Second, the overall level of learning effectiveness was perceived at a moderate level. Academic Performance scored highest ($M = 3.353$), followed by Learning Engagement ($M = 3.345$), while Learning Strategies scored lowest ($M = 3.329$). This pattern may indicate a "strategy gap": students were perceived to achieve moderate academic outcomes without commensurate development of effective learning strategies. Third, all ten dimensions of academic leadership showed significant positive correlations with all three dimensions of learning effectiveness ($p < .01$). Among the stronger correlations were Curriculum Leadership and Academic Performance ($r = .467$), Innovation Support and Academic Performance ($r = .443$), Innovation Support and Learning Strategies ($r = .432$), and Instructional Supervision and Learning Strategies ($r = .428$). These findings indicate that academic leadership is positively associated with student learning outcomes.

7.2. Research Innovations

This study offers several notable innovations. First, this study extends the application of Leadership for Learning theory^[1] to a Chinese private senior high school context. While the theory has been widely applied in Western and public school settings, empirical research examining its applicability in Chinese private secondary education remains limited. Second, this study provides empirical evidence on the relationship between academic leadership and learning effectiveness in a Chinese private senior high school. Prior research in China has predominantly focused on public schools or examined leadership as a unidimensional construct. Third, this study adopts a multidimensional approach by examining ten leadership dimensions and three learning effectiveness dimensions, allowing for a more nuanced understanding of how specific leadership practices relate to specific student learning outcomes. Fourth, the questionnaire provides a practical diagnostic tool that other private schools can use for self-evaluation and improvement planning.

Discussion

The findings of this study provide empirical insights into the relationship between academic leadership and learning effectiveness at Yinhai Sanya High School. Overall, academic leadership was perceived at a moderate level ($M = 3.406$), while learning effectiveness was also perceived at a moderate level. Significant positive correlations were found between all leadership dimensions and all learning effectiveness dimensions. These results are discussed in three parts: teachers' perceptions of academic leadership, student learning effectiveness, and the leadership-learning connection.

8.1. Teachers' Perceptions of Academic Leadership

The overall level of academic leadership was perceived at a moderate level ($M = 3.406$), consistent with Hallinger's^[1] emphasis on instructional leadership. Construction of Shared Academic Vision scored highest ($M = 3.548$), indicating effective communication of school direction^[12]. However, Data-Informed Decision-Making ($M = 3.294$), Resource Allocation ($M =$

3.326), and Innovation Support ($M = 3.328$) received the lowest ratings, indicating possible areas for improvement. The low score for data-informed decision-making suggests that while student assessment data are available, the use of data for instructional improvement may warrant further attention.^[2] Innovation support received a comparatively low rating despite its strong correlation with academic performance ($r = .443$), suggesting that teachers may perceive pedagogical experimentation as risky in a high-stakes examination environment.^[8]

8.2. Student Learning Effectiveness

Learning effectiveness was perceived at a moderate level. Learning Strategies scored lowest ($M = 3.329$), which may indicate a "strategy gap": students achieve passable grades without developing metacognitive and self-regulated learning skills^[10]. One possible explanation is that teachers under exam pressure may prioritize content coverage over strategy instruction. The moderate level of Learning Engagement ($M = 3.345$) suggests that while students participate in classroom activities, there may be room for deeper cognitive and emotional engagement.^[13]

8.3. The Leadership-Learning Connection

All ten leadership dimensions correlated positively with all three learning effectiveness dimensions ($p < .01$). Among the stronger correlations were Curriculum Leadership and Academic Performance ($r = .467$), Innovation Support and Academic Performance ($r = .443$), Innovation Support and Learning Strategies ($r = .432$), and Instructional Supervision and Learning Strategies ($r = .428$). These findings indicate that academic leadership, particularly curriculum leadership, innovation support, and instructional supervision-is positively associated with student outcomes^[5]^[14]. Weaker correlations with Learning Engagement suggest that the relationship between leadership and engagement may be indirect, operating through teacher practices and school culture^[2].

9. Recommendations

Based on the findings and conclusions of this study, the following recommendations are offered for school administrators, teachers, and future researchers.

9.1. Recommendations for Practice

For administrators: Data-Informed Academic Decision-Making scored lowest ($M = 3.294$) yet correlated significantly with learning effectiveness. Administrators should provide training on data interpretation and establish regular data review meetings. Innovation Support scored low ($M = 3.328$) despite its strong correlation with Academic Performance ($r = .443$). Administrators should create structured opportunities for teachers to experiment with innovative teaching methods. Resource Allocation also scored low ($M = 3.326$), suggesting a need for transparent budgeting and regular needs assessments. For teachers: The correlation between Instructional Supervision and Learning Strategies ($r = .428$) suggests that constructive feedback can enhance students strategy use. Teachers should incorporate explicit strategy instruction into daily teaching and create classroom environments that encourage self-reflection. For schools: The questionnaire provides a diagnostic tool for self-evaluation and school improvement planning.

9.2. Recommendations for Further Study

Future research should conduct comparative studies across multiple private senior high schools, employ longitudinal designs to examine changes over time, and use mixed-methods to provide richer contextual information. Mediation studies should investigate mechanisms through which academic leadership is associated with learning effectiveness.

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