

Approaches for Improving Personal Training and Development in the Public Middle Schools of Tiantao School in Nanning

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Abstract: This study adopted an exploratory research design to examine personal training and development at Tiantao School in Nanning, aiming to assess its current training status and develop targeted practical improvement strategies. Following Krejcie and Morgan's sampling criteria, 243 teachers and 98 administrative staff were selected via stratified random sampling, yielding 341 valid samples in total. Questionnaire and expert evaluation data were analyzed through descriptive statistics and the modified Priority Needs Index (PNI). Results showed basic training operates adequately; teacher professional development (PNI=0.027) and leadership development (PNI=0.031) are core optimization priorities. Clear position-based demand gaps exist: teachers rank enhancement of teaching competence (PNI=0.053) as their top developmental need, while administrators prioritize team management skills (PNI=0.071). This study constructed a seven-dimensional differentiated training framework covering excellent teaching case studies, cross-school teaching exchanges, teaching reflection journals, team management practices, classic reading, leadership training, and conflict management capacity building. The framework was validated by three educational management experts, receiving ratings of "Very high" for both appropriateness (M = 4.68) and feasibility (M = 4.64), thereby confirming its practical applicability for institutional improvement at Tiantao School and comparable public junior high schools.

Keywords: Personal training and development; Middle Schools; Tiantao School in Nanning

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1. Background and Significance of Research

China has steadily promoted teachers' professional development reform and mandated regular faculty training systems for basic education, with Guangxi Zhuang Autonomous Region releasing matching regulatory documents. The 14th Five-Year Plan for Teacher Training in Primary and Secondary Schools and Kindergartens (Guijiao Guifan (2022) 10) proposed tiered and categorized training to cultivate high-quality teaching staff, while the revised Measures for the Administration of Teacher Training Projects (Guijiao Guifan (2023) 8) standardized training implementation, assessment, precision and effectiveness. Despite Nanning's growing educational

investment guided by regional policies, local public middle schools are still plagued by rigid training modes and poor post-adaptation support.

Established in 1956, prestigious Tiantao School in Nanning exhibits obvious training drawbacks identified via field research: homogenized training content ignoring demands of frontline teachers and administrative staff, over-reliance on traditional offline lectures lacking practical interactive sessions, and flawed training evaluation and implementation mechanisms that fail to drive faculty professional growth, limiting staff development and school educational quality improvement. Drawing on relevant industry policies, campus realities and position requirements, this empirical study targets Tiantao's teachers and administrators to identify gaps between existing training and developmental needs and design targeted optimization schemes, offering practical solutions for the school and references for peer public middle schools in Guangxi.

1.1. Research Status and Research Gaps

Domestic empirical studies on school personnel training at primary and secondary levels are abundant. Nevertheless, most existing literature only investigates teachers or administrative staff separately, lacking integrated research covering both groups simultaneously. Furthermore, a large proportion of prior studies stay at theoretical discussion stage, with few empirical works combining school-based survey data and expert-verified operable implementation schemes. This exploratory study carries out questionnaire surveys and expert evaluation based on real campus conditions of Tiantao School in Nanning, so as to fill the above-mentioned research gaps.

1.2. Research Questions

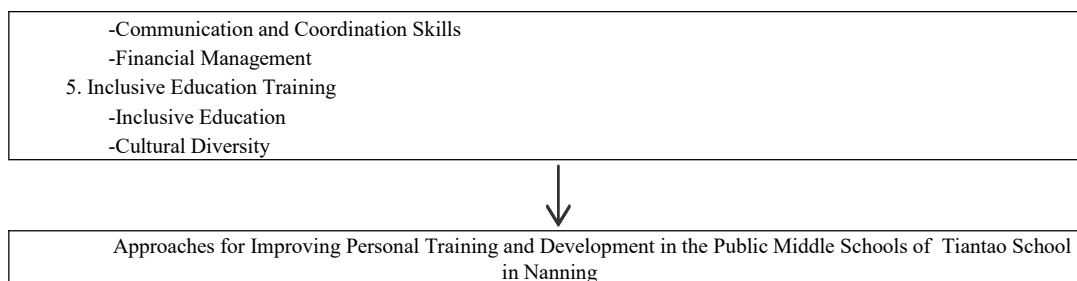
1. What are the current state and desired state of personal training and development in the public middle schools of Tiantao School in Nanning?
2. What are appropriate approaches for improving personal training and development in the public middle schools of Tiantao School in Nanning?

1.3. Research Objectives

1. To analyze the current state and desired state for the development of personal training and development in the public middle schools of Tiantao School in Nanning.
2. To propose appropriate approaches for improving personal training and development in the public middle schools of Tiantao School in Nanning.

2. Conceptual Framework

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| <ol style="list-style-type: none">1. Teacher Professional Development<ul style="list-style-type: none">-Professional Knowledge-Educational Technology Integration-Enhancement of Teaching Competence2. Leadership Development<ul style="list-style-type: none">-Team Management Skills-Decision-Making Skills-Understanding of Educational Policies3. Compliance and Safety Assurance System<ul style="list-style-type: none">-Child Protection Laws-Emergency Response Preparedness4. Administrative Staff Training<ul style="list-style-type: none">-Improvement of Management Efficiency |
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3. Expected Benefits

1. Benefits to teachers: By improving training and development methods, teachers will have more opportunities for professional growth, improve teaching ability and job satisfaction.

2. Benefits to school administrators: School administrators will obtain effective teacher training and development strategies, improve the overall education quality of the school and the stability of the teaching staff.

3. Benefits to schools: The school will form a more united and professional education community, enhance the school's reputation and competitiveness, and ultimately achieve the school's long-term development goals.

4. Literature Review

4.1. Connotation and Value of Personal Training and Development

Personal training and development refer to systematic learning and practical activities planned and organized by schools in accordance with job requirements and employees' career plans, aiming to improve staff's professional knowledge, vocational skills and comprehensive literacy^[3]. For public middle schools, a sound training system can mobilize staff enthusiasm, optimize team collaboration, stabilize the teaching workforce and boost teaching and management quality, which serves as the cornerstone for long-term school development^[4].

4.2. Core Dimensions of Personal Training and Development

This study divides research subjects into teachers and administrative staff, corresponding to two major training dimensions:

1. Teacher Professional Development: It consists of three sub-dimensions: professional knowledge, educational technology integration and teaching competence. Teaching competence including classroom instruction, questioning and class management is the core demand of frontline teachers^[5].

2. Leadership Development: It includes team management, decision-making and understanding of educational policies. Team management capability is the key to the coordinated operation of all departments in schools^[6].

4.3. Mainstream Training Modes and Relevant Research

Practical research has verified a number of effective training modes. For teachers, excellent teaching case study, inter-school exchanges and teaching reflection journals can transform theoretical knowledge into practical teaching capabilities^[7]. For administrative staff, action learning,

classic reading, scenario-based training and conflict management training can comprehensively improve management competencies^[8]. Uniform training modes widely adopted in schools fail to match practical work needs and lower training effectiveness^[9].

5. Methodology

5.1. Research Design

This study employed an exploratory research design separated into two sequential phases. The rationale for selecting an exploratory design is elaborated below: Empirical studies exploring dual-group differentiated personal training and development demands (both teachers and administrators) in Chinese public middle schools remain limited. This design first quantifies training gaps via questionnaires, then develops customized optimization schemes based on empirical evidence. Expert evaluation only acted as an auxiliary verification tool to judge the appropriateness and feasibility of drafted training approaches, rather than an independent qualitative data collection procedure.

Phase 1: Needs assessment and situational analysis stratified random sampling was conducted in accordance with the Krejcie and Morgan sampling standards. Questionnaires were administered to 243 teachers and 98 administrative staff at Tiantao School in Nanning to gather empirical data. Descriptive statistics and the modified Priority Needs Index (PNI) were utilized to examine the prevailing training conditions and differentiated developmental demands of school personnel.

Phase 2: Framework drafting and expert validation seven targeted optimization strategies for personal training and development were formulated based on the outcomes of demand analysis. Three experts specializing in educational administration were recruited to conduct systematic review and validation of the full framework, so as to examine its scientific rigor, appropriateness and feasibility. Ultimately, questionnaire datasets and expert evaluation scores were integrated for comprehensive analysis, forming a holistic optimization system for school personal training and development.

5.2. Research Participants

The research population includes 661 teachers and 130 administrative staff of Tiantao School in Nanning. Following Krejcie and Morgan's sampling criteria, 243 teachers and 98 administrative staff were selected via stratified random sampling, yielding 341 valid samples in total.

5.3. Research Instruments

Questionnaire: Two sets of scales were designed for teachers and administrative staff respectively, adopting a 5-point Likert scale (1 = Extremely Low, 2 = Low, 3 = Moderate, 4 = High, 5 = Extremely High). The questionnaire involves four parts: basic personal information, current training status, expected training level and training form preferences. Reliability test results showed that the Cronbach's Alpha coefficient of the teacher questionnaire is 0.941, and that of the administrative staff questionnaire is 0.959, indicating excellent internal reliability and valid data.

Expert evaluation form: Purposive sampling was adopted to select three experts with solid theoretical knowledge and rich practical experience in educational management and school operation to evaluate the appropriateness and feasibility of seven optimized training schemes. The Majority Method and Percentage Method are used for data analysis, combined with mean value and

standard deviation for auxiliary interpretation. The scoring criteria were defined as follows: 4.50–5.00 for Very High, 3.50–4.49 for High, 2.50–3.49 for Moderate, 1.50–2.49 for Low, 1.00–1.49 for Very Low. The results showed that the overall appropriateness and overall feasibility of the schemes were both rated at the highest level, which proves the professionalism and authority of the evaluation.

5.4. Data Collection

Questionnaires were distributed and collected online, and all returned questionnaires were valid. Expert evaluation forms were delivered offline with full data collection.

5.5. Data Analysis Methods

1. Descriptive statistics: Calculated mean values and standard deviations to analyze the current and expected training levels.

2. Modified priority need index (PNI): The calculation formula was $PNI = (I - D) / D$, where I stands for the expected score and D stands for the current score. A higher PNI value indicates a stronger demand for improvement.

3. Frequency statistics: Calculated the proportion of each training form to analyze staff preferences.

4. Majority method, percentage method and mean analysis: Comprehensively interpreted expert scores to judge the rationality and feasibility of schemes.

6. Findings

6.1. Overall Analysis of Training Demands

Table 1. Overall PNI Scores of All Training Dimensions for Teachers . Higher PNI Value Represents Higher Training Priority

Training and Development	Current State	Desired State	PNI	Order
Teacher Professional Development	2.53	2.60	0.027	1
Compliance and Safety Assurance	2.51	2.56	0.020	2
Inclusive Education Training	2.54	2.53	-0.004	3

Results showed basic training operated adequately; teacher professional development (PNI=0.027) was a core optimization priorities.

Table 2. Overall PNI Scores of All Training Dimensions for Administrators. Higher PNI Value Represents Higher Training Priority

Training and Development	Current State	Desired State	PNI	Order
Leadership Development	2.47	2.55	0.031	1
Compliance and Safety Assurance	2.55	2.43	-0.049	4

Administrative Staff Training	2.46	2.50	0.016	2
Inclusive Education Training	2.63	2.56	-0.027	3

Results showed basic training operated adequately; leadership development (PNI=0.031) was a core optimization priorities.

6.2. Analysis of Sub-dimensional Demands by Groups

6.2.1. Demands for Teacher Professional Development

Table 3. PNI Scores of Sub-Dimensions of Teacher Professional Development. Higher PNI Indicates Higher Training Priority

Teacher Professional Development	Current State	Desired State	PNI	Order
Enhancement of Teaching Competence	2.50	2.64	0.053	1
Professional Knowledge	2.56	2.63	0.027	2
Educational Technology Integration	2.54	2.54	0.000	3

PNI results showed teaching competence was teachers' top training priority. Teachers ranked instructional competence (PNI=0.053) as their top developmental need.

6.2.2. Demands for Leadership Development of Administrative Staff

Table 4. PNI Scores of Sub-Dimensions of Administrative Leadership Development. Higher PNI Indicates Higher Training Priority

leadership Development	Current State	Desired State	PNI	Order
Team Management Skills	2.37	2.55	0.071	1
Decision-Making Skills	2.51	2.58	0.027	2
Understanding of Educational Policies	2.52	2.51	-0.004	3

Table 4 showed team management skills were the top priority for administrators, while policy understanding met requirements. Administrators prioritized team management skills (PNI=0.071).

6.3. Statistics on Training Form Preferences

Table 5. Preferred Training Forms of Teachers (N=243)

Enhancement of Teaching Competence	Percentage (%)	Preference Ranking
Excellent Teaching Case Studies	59.7	1
Cross-School Teaching Exchange	58.8	2
Teaching Reflection Journals	58.4	3

Teachers preferred case-based teaching, cross-school exchange and reflective practice for instructional competence improvement.

Table 6 . Preferred Training Forms of Administrators (N=98)

Team Management Skills	Percentage (%)	Preference Ranking
Team Management Practice	51.0	1
Classics Reading	51.0	1
Leadership Training	49.0	2
Conflict Management	49.0	2

Administrators prioritized team management capacity upgrading; they preferred team management practice and classic reading, alongside leadership and conflict management training.

6.4. Results of Expert Evaluation

The researchers submitted the draft approaches for improving personal training and development in the Public Middle Schools of Tiantao School in Nanning to three educational management experts, who assessed the appropriateness and feasibility of the draft program via the Majority Method and the Percentage Method. The values $M = 4.68$ (appropriateness) and $M = 4.64$ (feasibility) mentioned in the abstract represent the overall average scores of the seven training optimization approaches shown in Table 7.

Table 7. Experts' Mean Scores for Seven Training Optimization Schemes. All Scores Range from 1.00 to 5.00

Training and Development Needs	Approaches to Improving Personal Training and Development	Appropriateness Mean	Appropriateness SD	Feasibility Mean	Feasibility SD	Overall Evaluation
Excellent Teaching Case Studies	Establishing a case-driven pedagogical cognitive system	4.56	0.51	4.56	0.51	Very high
Cross-School Teaching Exchange	Establish inter-school professional learning communities	4.71	0.47	4.71	0.41	Very high
Teaching Reflection Journals	Implement a Guided Reflection Practice System	4.72	0.40	4.52	0.47	Very high
Team Management Practice	Implement action learning programs	4.62	0.47	4.72	0.40	Very high
Classics Reading	Establish theory-driven leadership workshops	4.67	0.50	4.63	0.47	Very high
Leadership Training	Conduct contextual leadership training	4.79	0.37	4.67	0.39	Very high

Conflict Management	Implement conflict management capacity building	4.72	0.40	4.67	0.47	Very high
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Table 7 showed experts' evaluation results of the training optimization schemes. All schemes scored very high in appropriateness and feasibility, and low standard deviations guaranteed reliable expert judgements. The values $M = 4.68$ (appropriateness) and $M = 4.64$ (feasibility) cited in the abstract represent the overall average scores of all seven training optimization approaches listed in Table 7.

6.5. Summary of Research Results

First, Tiantao School in Nanning achieved a moderate overall training level, with teacher professional development and leadership development identified as its two primary weak points. Second, training demands varied substantially across staff groups owing to differentiated job responsibilities. Third, all faculty showed a clear preference for practical, interactive training modes. Fourth, expert evaluation confirmed that the seven optimized schemes were scientifically rigorous and highly feasible.

7. Optimization Approaches and Implementation Procedures

7.1. Optimization Approaches for Teachers

Approach 1: Establishing a case-driven pedagogical cognitive system to enhance teaching capabilities.

Integrate teaching case studies into faculty professional development plans, fund and maintain a teaching case repository, set up subject-specific case development teams for bi-monthly workshops, apply adapted exemplary teaching cases in classroom practice, evaluate case learning outcomes with feedback, and enable administrative review for continuous improvement of the case study system.

Approach 2: Establish inter-school professional learning communities to enhance teaching capabilities.

Build inter-school teaching exchange partnerships with guaranteed funding, organize regular cross-school teaching observations and research, share innovative teaching strategies and collaborative outcomes, implement effective exchanged teaching practices, evaluate collaboration effectiveness, and establish a mechanism to promote exemplary teaching practices for broader teacher participation.

Approach 3: Implement a guided reflection practice system to enhance teaching competence.

Integrate reflective teaching journals into teacher development plans, fund reflective practice training and digital platforms, implement weekly journal writing and monthly sharing sessions, translate reflective insights into teaching improvement, analyze the correlation between reflection quality and teaching behavior improvement, and incorporate exemplary reflection cases into teacher professional development portfolios.

7.2 Optimization Approaches for Administrative Staff

Approach 4: Implement action learning programs to enhance team management capabilities.

Design school-challenge-based action learning programs with dedicated budgets and expert resources, form cross-departmental teams for quarterly workshops, engage department heads in group participation, submit solution implementation plans to the school committee, and conduct outcome review and successful solution scaling.

Approach 5: Establish theory-driven leadership workshops to enhance team management capabilities.

Develop classic management literature-based leadership reading programs with dedicated budgets, engage middle managers in theory-practice integrated workshops, share leadership theory application insights, facilitate theoretical framework implementation, evaluate theory practicality, and build a theory-to-practice conversion mechanism for workshop optimization.

Approach 6: Conduct contextual leadership training to enhance team management capabilities.

Design priority-oriented situational leadership training with dedicated budgets, engage administrators in role-playing and crisis management simulations, deliver personalized feedback and coaching to optimize leadership styles, support skill application in daily management, assess training practicality and effectiveness, and establish manager-specific individual development plans with ongoing coaching.

Approach 7: Implement conflict management capacity building to enhance team management capabilities.

Develop need-based conflict management training with dedicated budgets for trainers and materials, deliver simulated mediation exercises, provide personalized communication assessments and improvement guidance, support on-the-job skill application, evaluate strategy effectiveness, and establish conflict early warning and emergency response mechanisms.

8. Conclusion

8.1. Research Findings

Based on questionnaire demand measurement and expert evaluation data, this paper sorted out the structural defects of the school's existing training system and corresponding targeted optimization paths. The core research results are summarized as follows:

1. The overall school training level was moderate. Basic training programs such as inclusive education and safety management had satisfied routine operational needs, while teachers' instructional competence and administrators' team management capacity were identified as the core priorities for future improvement.

2. Significant position-based training differences existed. Teachers prioritized practical, experience-based training including case learning, cross-school exchanges and teaching reflection. In contrast, administrative staff preferred theory-practice integrated leadership and conflict management training.

3. The proposed optimization frameworks were valid and feasible. Expert evaluation confirmed that the seven tailored training schemes were scientifically grounded and practically implementable, which can effectively meet the differentiated developmental needs of teachers and administrators.

4. The current training system had structural defects. This study is limited by its single-school sample; future research can expand sampling to establish universal training models for local middle schools.

8.2. Research Innovations

This study integrates the modified Priority Needs Index (PNI), differentiated faculty training theory and educational leadership theories to construct a seven-dimensional categorized training system targeting both teachers and administrative staff in public middle schools, filling the research gap that most prior studies only discuss single-position groups and rely on uniform one-size-fits-all training modes. Four core innovations covering theoretical, practical, systematic and methodological dimensions are summarized as follows:

1. Theoretical Innovation: This research expands the application scope of demand-oriented differentiated training theories by introducing the PNI quantitative evaluation tool into basic education school training research. It establishes a unified analytical framework covering teaching staff and administrative management staff simultaneously, supplementing the theoretical deficiencies of single-group research in existing literature.

2. Practical Innovation : Based on real questionnaire PNI measurement data and expert verification, this paper designs position-targeted training paths for teachers and administrators respectively. Seven operable training modules are formed to solve the practical defects of homogenized school training and meet the differentiated competency improvement demands of different posts.

3. System Innovation: A closed-loop training operation system is built including PNI demand diagnosis, classified training implementation, expert effect evaluation and dynamic scheme adjustment. Combined with local education policy requirements of Guangxi, the system supports iterative optimization according to school development demands, making school training sustainable rather than fragmented temporary activities.

4. Methodological Innovation : A standardized exploratory research framework combining stratified random sampling questionnaires and auxiliary expert evaluation is constructed. The quantitative demand measurement via PNI and qualitative expert framework verification complement each other, forming a replicable analysis tool for subsequent school personnel training empirical research.

9. Discussion

Most previous domestic studies only focus on either teachers or administrative staff in isolation. This exploratory research further empirically verifies significant position-based disparities in personal training and development demands within public middle schools. The consistency between this study's findings and classic educational administration theories^[6,7] strengthens the internal validity of the dataset. The three structural training defects summarized from questionnaire data also align with the common training limitations of basic education institutions outlined by^[9].

9.1. Analysis on Differences in Training Demands

The gap in training demands arose from their disparate job responsibilities. Frontline teachers mainly carried out classroom teaching and student tutoring, thus ranking enhancement of teaching competence as their top developmental priority, and they tended to acquire practical experience via case study and peer communication. In contrast, administrative staff were in charge of department coordination and campus operation, so they attached great importance to team management skills.

The school's prior uniform training framework failed to accommodate position-specific demand discrepancies, which serves as the major factor leading to ineffective training. Meanwhile, the school provided sound basic training covering compliance and safety assurance as well as inclusive education training, which built a solid foundation for further training optimization.

9.2. Rationality of Selected Training Forms

The training modalities adopted in this research are supported by extant academic literature and on-campus practice. Teaching case study and reflective practice systematize fragmented practical experience of teachers and advance teacher professional development^[10]. Inter-school exchanges eliminate resource limitations of individual schools and facilitate regional teaching and research resource sharing^[11]. For administrative staff, action learning, classics reading and conflict management training integrate theoretical knowledge with practical operations, showing strong compatibility with leadership development work^[12]. The consistency between the present findings and established theories strengthens the scientific validity of this research.

9.3. Summary of Deficiencies in the Current Training System

Integrating questionnaire data and field investigation, three prominent drawbacks existed within the existing training system:

1. The training content lacked tiered design and could not satisfy differentiated demands corresponding to teacher professional development and leadership development.
2. Rigid training modalities were deficient in practical and interactive sessions.
3. The absence of a long-term closed-loop mechanism caused disjointed training activities and unsustainable developmental outcomes.

The seven optimized training approaches are developed specifically to address the aforementioned limitations.

10. Recommendations

Based on empirical findings, this study puts forward targeted optimization strategies for faculty professional development.

10.1. Teacher Teaching Competence Development

Schools should establish a systematic case-based teaching training system with special funds and regular workshops to promote exemplary teaching application. Sustainable cross-school cooperation platforms should be built for joint teaching research and experience exchange. Standardized reflective mechanisms with digital support and regular sharing should also be implemented to facilitate continuous teaching improvement.

10.2. Administrative Management Competence Development

Administrative teams should conduct problem-oriented cross-departmental action learning to address practical management issues. Theory-based leadership reading workshops help transform theoretical knowledge into practical governance. Combined with annual school priorities,

situational leadership training, crisis simulations and personalized coaching can strengthen managerial competencies. Targeted conflict management training, early warning and emergency mechanisms should also be improved to enhance team coordination.

10.3. Research Prospects

Future research could expand sample diversity and adopt longitudinal investigation to validate the universality and long-term effectiveness of the proposed training system, providing empirical references for faculty professional development in basic education schools.

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