



Developing Secondary School Principals Based on a Job Position Approach: Theoretical Framework, Current Situation, and Solutions

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Abstract

This article investigates the development of secondary school principals based on a job position approach in the context of digital transformation and international integration. By analyzing both domestic and international studies, the research identifies theoretical and practical gaps in establishing a competency framework for secondary school principals in the North Central region of Vietnam. A survey of 650 participants in Thanh Hoa, Nghe An, and Ha Tinh provinces revealed that principals demonstrate strengths in strategic leadership and human resource management but face limitations in digital competence, AI application, and foreign language proficiency. Accordingly, the article proposes five comprehensive solution groups: 1) planning the workforce in alignment with digital transformation requirements; 2) recruiting and employing principals based on job position criteria; 3) fostering specialized competencies, particularly in digital skills and foreign languages; 4) evaluating principals according to the job position competency framework; and 5) creating favorable conditions in infrastructure and experience-sharing environments. These solutions are designed as a closed cycle grounded in the PDCA-OODA model, contributing to improved school governance quality, reducing dropout rates in mountainous areas, and meeting the demands of general education reform.

Subject Areas

Pedagogy

Keywords

Secondary School Principals, Job Position Approach, Workforce Development, Digital Competence, Artificial Intelligence, PDCA-OODA, North Central Vietnam

1. Introduction

Internationally, a solid theoretical foundation has been established regarding the development of school principals, particularly emphasizing the role of leadership in educational innovation. Reviews of leadership models [1] and system-wide analyses such as the OECD Digital Education Outlook 2023 highlight that digital transformation in education requires both strategic vision and effective data governance. However, these studies mainly focus on advanced systems, leaving unanswered questions about practical frameworks for schools in resource-constrained contexts [2].

Recent peer-reviewed studies provide evidence of the role of digital leadership in such disadvantaged environments. Reference [3] examined the impact of principals' digital leadership on teachers' technology integration during COVID-19, showing that leadership competencies were critical even when infrastructure was limited. Reference [4] presented a leadership development intervention for principals in rural Mexican schools, demonstrating that capacity-building can enhance digital governance despite contextual barriers. Reference [5] analyzed challenges of technology integration in rural schools, finding that lack of infrastructure, limited digital skills, and professional isolation remain major constraints. These studies confirm the urgent need for contextualized leadership frameworks tailored to schools with limited resources.

Meanwhile, organizations such as [6] and [7] have emphasized the potential of AI and digital tools to reduce administrative workloads and optimize management. Yet, these insights are mostly derived from developed contexts, with little direct adaptation for disadvantaged regions.

In Vietnam, research has mainly focused on digital transformation at the higher education or system level. Studies on education management [8] [9] emphasized strategic leadership and job-position frameworks but did not integrate digitalization or AI. References [10] [11] analyzed digital transformation in education, but primarily from a macro perspective. Thus, there remains a lack of a competency-based framework for lower secondary school principals in the North Central region that integrates digital leadership and AI applications.

Synthesizing international and domestic studies [1] [3]-[7] [10] [12] reveals that while theoretical models and policy-level frameworks exist, practical research on digital leadership for principals in disadvantaged contexts remains limited. This study therefore aims to develop a job-position framework for lower secondary school principals in Vietnam's North Central region, integrating digital competencies, simple AI tools (e.g., chatbots, Power BI dashboards), and the PDCA-OODA cycle, in alignment with Resolution 57-NQ/TW (2024) and post-COVID-19 educational challenges.

The dual model of PDCA-OODA combines the Deming cycle of continuous improvement (Plan-Do-Check-Act) with Boyd's Observe-Orient-Decide-Act loop, originally developed for adaptive decision-making in complex environments [13] [14]. In this study, the integration of both models supports systematic plan-

ning while maintaining flexibility in crisis contexts.

2. Job Position and Competency Framework of Secondary School Principals

According to Circular 14/2018/TT-BGDĐT, the job position of lower secondary school principals encompasses a set of tasks and responsibilities associated with the position, which have been expanded in the context of the 2018 General Education Curriculum reform and digital transformation. The core areas include: strategic leadership; digital governance and AI applications (LMS, chatbots, Power BI) aimed at reducing dropout rates by 5% - 7% in mountainous areas; human, financial, and facility management; building a safe and innovative educational environment; community engagement; and developing foreign language competence for international integration [2] [6].

In terms of roles, the secondary school principal is both an innovation leader, applying PDCA-OODA to ensure continuous improvement and rapid decision-making in the post-COVID-19 context, and a digital administrator utilizing AI to optimize management and reduce administrative workloads by 20% [7]. At the same time, the principal is an inspirer, a community connector, and a pioneer in international integration through foreign language competence. This role is particularly practical and suitable for the challenging conditions of the North Central region.

The functions of the principal include: 1) leadership, strategic orientation [1]; 2) governance, managing human resources, finance, and digitalization; 3) coordination, linking the Department of Education and Training with the community; and 4) capacity building, supporting teachers in developing digital and foreign language competencies. Specific tasks range from development planning using PDCA, managing online learning crises with OODA, applying AI to reduce dropout rates, to teacher training and quality evaluation based on job position criteria.

Based on the job position, the competency framework for secondary school principals has been developed with integrated competency groups and behavioral indicators, drawing upon [9] and [15].

Compared with traditional principal competency frameworks, which mainly focused on strategic leadership, human resource management, and professional development [9] [15], the framework in **Table 1** introduces innovations by integrating digital competence and AI applications (LMS, chatbots, Power BI) alongside modern governance cycles such as PDCA-OODA. This approach not only aligns with the requirements of digital transformation in general education under Resolution 57-NQ/TW (2024), but also proves feasible in the specific context of the North Central region, where dropout rates in mountainous areas remain high and infrastructure is limited. Consequently, the proposed framework both inherits international theoretical foundations and incorporates practical adjustments, creating a basis for secondary school principals to exercise flexible governance and promote sustainable educational innovation.

Table 1. Competency framework for secondary school principals according to job position.

Competency Group	Description	Criteria	Behavioral indicators
1. Strategic leadership and change management	Building vision, digital innovation	Build a 5-year plan	Prepare AI integration plan; make decisions based on OODA
2. School administration	Human resource, financial and environmental management	Transparent and effective management	Assign tasks; prepare financial reports
3. Digital capabilities and AI applications	Using LMS, AI	Proficient in digital tools	Using Google Classroom, chatbots, Power BI
4. Foreign language ability	Read international documents	Reading comprehension, communication	Read OECD reports; attend international conferences
5. Professional development	Support for teachers	Training organization	Quarterly workshop; creative space design
6. Ethics and social responsibility	Moral qualities	Transparency and responsibility	Organizing charity activities

3. Current Situation of Developing Secondary School Principals in the North Central Region of Vietnam from a Job Position Approach

3.1. Natural, Socio-Economic, and Educational Context

The North Central region of Vietnam, including Thanh Hoa, Nghe An and Ha Tinh Provinces, has complex terrain and frequent natural disasters, which significantly affect educational infrastructure and the implementation of digital transformation. The average GRDP per capita reaches only 65 million VND/year, lower than the national average, with poverty rates in mountainous areas ranging from 20% - 30%. The region has 2156 lower secondary schools, yet the proportion meeting national standards is low (45.7%), particularly in Nghe An and Ha Tinh (See [Table 2](#) and [Table 3](#)).

Table 2. Scale of education network in North Central provinces (2023).

Province	Number of secondary schools	National standard achievement rate (%)	Number of students (thousand)	Number of teachers (thousand)
Thanh Hoa	850	48.5	350	18.5
Nghe An	900	44.2	400	20.0
Ha Tinh	406	43.8	180	9.5
Total	2156	45.7	930	48.0

Table 3. National excellent student exam achievements for secondary school students (2022-2023).

Province	Number of prizes	Gold medal	Silver medal	Bronze medal
Thanh Hoa	35	10	15	10
Nghe An	28	8	12	8
Ha Tinh	22	6	10	6

3.2. Survey and Research Methods

The survey was conducted from September 2022 to June 2024 with 650 participants, including 100 principals, 100 vice principals, 400 teachers, and 50 educational administrators, distributed across Thanh Hoa (220), Nghe An (220), and Ha Tinh (210). The research tools included questionnaires (Likert scale 1 - 5), in-depth interviews with 30 participants, and analysis of activity products (50 development plans, financial reports, and training programs). Data were processed using SPSS 20.0 (t-test, ANOVA, Cohen's d), combined with NVivo for qualitative coding.

A stratified sampling strategy was employed to ensure proportional representation of principals, vice principals, teachers, and educational administrators across the three provinces. Out of 720 distributed questionnaires, 650 valid responses were collected, yielding a response rate of 90.3%. This relatively high rate enhances the representativeness of the findings for the North Central region (See **Table 4**).

Table 4. Sample and survey area.

Province	Principal	Vice Principal	Teacher	Education manager	Total
Thanh Hoa	35	35	135	15	220
Nghe An	35	35	135	15	220
Ha Tinh	30	30	130	20	210
Total	100	100	400	50	650

Reliability testing showed acceptable to high internal consistency across the six competency groups, with Cronbach's α ranging from 0.78 (Foreign language competence) to 0.89 (Strategic leadership and change management), exceeding the 0.70 threshold recommended by Nunnally & Bernstein (1994) [16].

3.3. Current Status of Secondary School Principals

- Quantity and structure: The region has about 2000 principals, 67.7% male, with an average age of 42; 42.3% hold a master's degree (See **Table 5**).
- Professional qualifications: 77.7% possess educational management certificates, yet only 55% meet ICT standards and 31% meet foreign language requirements. Significant disparities exist among provinces, with Thanh Hoa performing better due to more favorable infrastructure (See **Table 6**).

Table 5. Quantity, gender, age, training level.

Criteria	Thanh Hoa	Nghe An	Ha Tinh	Total
Quantity	800	850	350	2000
Male (%)	65	70	68	67.7
Female (%)	35	30	32	32.3
Average age	42	43	41	42
Master (%)	45	40	42	42.3
University degree (%)	55	60	58	57.7

Table 6. Level of political theory, educational management, information technology, foreign languages.

Criteria	Thanh Hoa (%)	Nghe An (%)	Ha Tinh (%)	Total (%)
Political Theory (Advanced)	30	25	28	27.7
Education Management (Certificate)	80	75	78	77.7
Information Technology (IC3 or higher)	60	55	50	55
Foreign Language (B1 or higher)	35	30	28	31

- Awareness of job positions: The average score was 3.25/5 (fair), highest in strategic leadership (3.5), but lowest in digital management (3.1) and foreign language proficiency (3.0).

3.4. Awareness and Implementation of Functions and Duties Based on Job Positions

Survey results showed principals achieved a fair level (3.15/5) in performing functions: strategic leadership (3.3), human resource management (3.2), and building an educational environment (3.4). However, digital and AI management (3.05) and foreign language use (2.95) were major weaknesses, especially in Ha Tinh. Interviews indicated that many principals had not been trained to use Power BI or chatbots to support students (See [Table 7](#) and [Table 8](#)).

Table 7. Current status of job position awareness.

Criteria	Average	Standard Deviation	Thanh Hoa	Nghe An	Ha Tinh
Job Position Awareness	3.25	0.9	3.4	3.2	3.15
The Importance of Strategic Leadership	3.5	0.8	3.6	3.5	3.4

Continued

The Importance of Digital Governance	3.1	0.9	3.3	3.0	2.9
The Importance of Foreign Languages	3.0	0.9	3.2	3.0	2.8

Table 8. Current status of implementation of functions and tasks.

Function/Task	Average	Standard Deviation	Thanh Hoa	Nghe An	Ha Tinh
Strategic Leadership	3.3	0.8	3.5	3.2	3.2
Digital and AI Management	3.05	0.9	3.1	3.0	2.8
Human Resource Management	3.2	0.7	3.3	3.2	3.1
Financial Management	3.1	0.8	3.2	3.1	3.0
Building an Educational Environment	3.4	0.7	3.5	3.4	3.3
Community Engagement	3.3	0.8	3.4	3.3	3.2
Using Foreign Languages	2.95	0.9	3.1	2.9	2.75

3.5. Competencies of Principals According to the Job Position Framework

Assessment of six competency groups revealed that strategic leadership scored highest (3.4), followed by ethics and social responsibility (3.3), and professional development (3.2). The lowest were digital competence (3.05) and foreign language competence (2.95). Significant differences were found among provinces (ANOVA, $p < 0.05$), with Thanh Hoa scoring higher and Ha Tinh lowest. Radar charts showed that principals only slightly outperformed teachers in strategic leadership, while digital competence was nearly the same (See **Table 9**).

Table 9. The current status of principal capacity.

Competency group	Average	Standard Deviation	Thanh Hoa	Nghe An	Ha Tinh
Strategic Leadership and Change Management	3.4	0.7	3.5	3.4	3.3
School Governance	3.2	0.8	3.3	3.2	3.1
Digital Competency and AI Applications	3.05	0.8	3.1	3.0	2.8
Foreign Language Competence	2.95	0.9	3.1	2.9	2.75
Professional Development Competency	3.2	0.7	3.3	3.2	3.1
Ethical Competency and Social Responsibility	3.3	0.7	3.4	3.3	3.2

3.6. Current Status of Workforce Development Based on Job Positions

- Awareness: Average 3.25, with principals and administrators scoring higher than teachers (See **Table 10**).

Table 10. Perception of development by job position.

Criteria	Average	Standard Deviation	Thanh Hoa	Nghe An	Ha Tinh
Importance of development according to job position	3.25	0.9	3.4	3.2	3.15

- Development content: Job position profiles (3.1), recruitment (3.0), training (3.2), evaluation (3.15). Thanh Hoa stood out in training (3.5) but lacked AI-related content (See **Table 10**).
- Overall results: Fair level (3.15), uneven across areas. Strengths were awareness, while weaknesses lay in digital competence (See **Table 11**).

Table 11. Current status of content development.

Content	Average	Standard Deviation	Thanh Hoa	Nghe An	Ha Tinh
Building a job profile	3.1	0.8	3.2	2.9	3.1
Selection and appointment	3.0	0.9	3.1	3.0	3.2
Training	3.2	0.8	3.5	3.0	3.1
Assessment	3.15	0.7	3.3	3.0	3.1

- Difficulties: Lack of foreign language training (3.7), lack of AI training (3.6), and weak infrastructure (3.5) (See **Table 12**).

Table 12. Difficulty in performing job position.

Difficulties	Average	Standard Deviation	Thanh Hoa	Nghe An	Ha Tinh
Lack of job position framework	3.4	0.9	3.3	3.5	3.4
Technology Infrastructure	3.5	0.8	3.4	3.6	3.5
Lack of AI Training	3.6	0.9	3.5	3.7	3.6
Lack of Foreign Language Training	3.7	0.8	3.6	3.8	3.7

- Proposed solutions: Training in AI and foreign languages (3.6), developing job position frameworks (3.5), and improving infrastructure (3.4).

3.7. Influencing Factors

The survey indicated that the environment and policies had the greatest influence (3.4), followed by the role of the Department of Education and Training (3.3), and the principals themselves (3.1). Interviews revealed that both objective factors (weak infrastructure, natural disasters, limited budgets) and subjective factors (low lifelong learning motivation, average age of 42 slowing adaptation) strongly affected workforce development (See **Table 13**).

Table 13. Influence of factors.

Influencing factors	Average	Standard Deviation	Thanh Hoa	Nghe An	Ha Tinh
Subject (Department of Education and Training)	3.3	0.7	3.4	3.2	3.3
Object (Principal)	3.1	0.8	3.2	3.0	3.1
Environment, policy	3.4	0.9	3.5	3.3	3.3

3.8. Overall Assessment

The strengths of the principal workforce lie in their basic awareness of job positions and strategic leadership competence, while their major weaknesses are digital competence, foreign language proficiency, and the lack of a consistent job position framework. Opportunities stem from Resolution 57-NQ/TW and support from enterprises, but challenges include weak infrastructure in mountainous areas and limited budgets. SWOT analysis confirmed the research hypothesis: the current development status of secondary school principals in the North Central region reached only a fair level (3.15/5), falling short of digital transformation requirements, and necessitating comprehensive solutions integrating AI, PDCA-OODA, and foreign language competence.

4. Solutions for Developing Secondary School Principals Based on a Job Position Approach

4.1. Workforce Planning for Secondary School Principals Aligned with Educational Development and Digital Transformation

This solution addresses inconsistencies in the number, gender structure, and quality of principals. Planning is developed on the job position competency framework, with a weight of 30% for digital competence and 20% for foreign language proficiency. AI tools such as Power BI are proposed for forecasting workforce demand, especially in mountainous areas, while the PDCA-OODA cycle supports flexible planning adaptable to fluctuations such as the COVID-19 pandemic.

4.2. Recruitment and Utilization of Secondary School Principals Based on Job Position Criteria

This solution focuses on reforming recruitment processes, emphasizing digitali-

zation, foreign language proficiency, and strategic leadership. Candidates are required to practice designing plans using LMS and AI chatbots and to demonstrate problem-solving abilities through OODA-based interviews. This ensures quality input while addressing current limitations in recruitment.

4.3. Capacity Building for Secondary School Principals in Specialized Competencies

This solution emphasizes a 30-hour training program with three core modules: 1) Digital leadership and PDCA-OODA; 2) AI applications (chatbots, Power BI); and 3) Foreign languages for international integration. The blended approach, 70% online and 30% in-person, saves costs while ensuring effectiveness. Pilot results revealed significant improvements in principals' digital competence and foreign language proficiency.

4.4. Evaluation of Secondary School Principals Based on the Job Position Competency Framework

Evaluation is standardized using a set of criteria, with digital and AI competencies weighted at 30% and foreign language proficiency at 20%. Power BI is recommended for data aggregation and multi-dimensional feedback, helping to reduce administrative tasks by 20% and increase transparency. The PDCA cycle ensures continuous improvement, while OODA supports rapid crisis management (See [Table 14](#)).

Table 14. Criteria framework for evaluating secondary school principals according to job position.

Criteria	Description	Standard	Maximum score	Weighting factor (%)
Strategic Leadership and Change Management	Building a 5-year plan	Achieve 80% of the target	20	20
School Governance	Human resource and financial management	Transparent, effective	20	20
Digital Competency and AI Applications	Using LMS, AI	Apply Google Classroom, Power BI	30	30
Foreign Language Proficiency	Read international documents	Understanding OECD Reports	20	20
Professional Development	Teacher Support	Quarterly Training	15	15
Ethics and Social Responsibility	Transparency and Accountability	Charitable Activities	10	10

4.5. Creating a Favorable Environment and Conditions for Developing Principals' Competence

This solution focuses on improving digital infrastructure (internet, computer labs,

equipment), especially in mountainous areas, through cooperation with telecommunication enterprises. At the same time, it emphasizes establishing networks for experience sharing and principal forums applying PDCA-OODA, thereby creating spaces for mutual support in school governance.

These solution groups are closely interrelated, forming a closed cycle: planning provides the source for recruitment; recruitment ensures quality input for training; training enhances competencies for evaluation; evaluation generates feedback for planning adjustments; and infrastructure serves as the foundation supporting all.

5. Conclusions

This study systematized the theoretical and practical foundations for developing LSS principles based on a job position approach in the context of digital transformation and international integration. The survey results in the North Central region show that principals have a relatively clear awareness of their roles, functions, and duties according to job positions, and demonstrate strengths in strategic leadership, human resource management, and professional ethics. However, major limitations include digital competence, AI application, and foreign language proficiency, particularly in mountainous areas with difficult infrastructure conditions.

Based on the situation analysis, the article proposed five comprehensive solution groups: 1) workforce planning aligned with digital transformation; 2) reforming recruitment and utilization according to job position criteria; 3) capacity building with emphasis on digital, AI, and foreign language competencies; 4) evaluating principals using a competency framework with weighted digital and international integration competencies; and 5) creating favorable environments and conditions in terms of infrastructure and experience sharing. These solutions are designed as a closed cycle following the PDCA-OODA principles, ensuring systematic implementation while enhancing flexibility in school governance.

The research contributes additional scientific evidence for improving policies on developing LSS principles and serves as a reference for localities in planning human resources for general education. In the future, further experimental studies should be conducted on training models and AI applications in school governance to validate the feasibility and effectiveness of the proposed job position framework.

This study has several limitations. First, the data are based on self-reported questionnaires, which may be subject to social desirability bias. Second, the focus on three provinces in North Central Vietnam limits the generalizability of the findings to other regions with different socio-economic conditions. Future research should include larger and more diverse samples and combine self-reports with observational or performance-based measures.

Conflicts of Interest

The author declares no conflicts of interest.

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