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An Innovative Leadership Program for Teachers in the Digital Era

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Abstract

This study examined the current status, desired goals, and developmental needs regarding innovative leadership among primary school teachers in the digital era under Ubon Ratchathani Primary Educational Service Area Office 1, Thailand. The research was carried out in two phases: first, assessing the current and desired conditions of innovative leadership and identifying priority needs; second, designing and evaluating a tailored professional development program. A sample of 316 teachers was selected through stratified random sampling. Data collection tools included questionnaires, semi-structured interviews with three expert informants, and program evaluation forms reviewed by five expert raters. Findings revealed a moderate level of current innovative leadership practices, with the highest desired level. Priority needs were ranked as follows: (1) technology integration, (2) innovation vision, (3) organizational climate, (4) creativity, and (5) teamwork. The resulting program included five thematic modules, each targeting a key area of innovation. Expert evaluations rated the program highly for both relevance and feasibility.

Keywords: Program Development, Innovative Leadership, Leadership Enhancement, Digital-Age Education

1. Introduction

The rapid advancement of knowledge, innovation, and technology is transforming societies across the globe. We are now firmly situated in the digital era, where digital tools and platforms are increasingly integrated into work processes and educational practices (Digital Economy Promotion Agency, Ministry of Digital Economy and Society, 2017). In this context, teachers must continuously adapt to technological changes and integrate innovative approaches into their teaching.
According to the Ministry of Education (2024), enhancing teachers' digital literacy involves developing their competencies in using educational technologies, managing online learning environments, and personalizing students' learning pathways based on individual interests and abilities. These competencies are vital for ensuring that teachers can meet the demands of 21st-century education.

Innovative leadership, defined as the ability to lead change through creative thinking and strategic use of innovation, is a critical component for improving education quality (Loader, 2016). Teachers, as front-line educational leaders, play a central role in implementing effective learning strategies. However, traditional teaching methods still dominate many classrooms, limiting the potential for educational innovation.

The Ubon Ratchathani Primary Educational Service Area Office 1 has emphasized in its 2024–2027 development plan the need to improve the quality of education by fostering moral, ethical, and digital competencies in teachers and students. Recent assessment results, including the NT and O-NET scores, have highlighted gaps in educational outcomes, underscoring the need for transformative change.

In response, this study aims to investigate the current conditions, desired outcomes, and necessary needs concerning innovative leadership among teachers under the Ubon Ratchathani Primary Educational Service Area Office 1. The study further seeks to develop a tailored program that promotes innovative leadership aligned with institutional and teacher needs. The ultimate goal is to empower teachers with forward-thinking strategies that enhance instructional quality and foster student development in the digital era.

2. Research Methodology

This research employs a mixed-methods approach, with the following research procedures.

2.1. Population and Sample

The study population included 1,770 teachers from primary and expanded opportunity schools under the Ubon Ratchathani Primary Educational Service Area Office 1 during the 2024 academic year. Using Krejcie and Morgan's sample size table and stratified random sampling based on school size, a representative sample of 316 teachers was selected.

2.2. Research Instruments

Questionnaire: Section 1 gathered demographic information; Section 2 measured current and desired levels of innovative leadership using a 5-point Likert scale.

Semi-Structured Interview: Included general information and participant perspectives on enhancing innovative leadership. The interview guide was reviewed for clarity and appropriateness by an advisor.

Evaluation Form: Used to assess the enhancement program's relevance and feasibility; comprised demographic items and evaluative statements.

2.3. Instrument Quality Assessment and Data Collection

In Phase 1, content validity was verified through expert review (IOC range: 0.60–1.00). Pilot testing with 30 non-sample participants yielded item discrimination indices (current condition: 0.369–0.783; desired condition: 0.322–0.752). Cronbach's alpha scores were 0.955 and 0.936, indicating high internal consistency.

Data were collected both in person and via Google Forms. Needs were analyzed using the modified Priority Needs Index (PNI Modified).

In Phase 2, best practices from award-winning educators were analyzed. Three key informants were selected based on OBEC Awards or equivalent recognition. Program validation involved expert focus group discussions to assess feasibility and alignment with identified needs.

2.4. Data Analysis and Statistical Methods Used in the Study

Descriptive statistics (mean, standard deviation, percentage) and instrument validation metrics (IOC, item-total correlation, Cronbach's alpha, PNI modified) were analyzed using a statistical software package.

3. Ethical Approval

This research project received ethical approval from Mahasarakham University (Ref 067-023/2025). All participants gave informed consent, and their privacy rights were strictly observed. The data are available upon reasonable request from the corresponding number.

4. Research Findings

The study yielded the following research findings:

4.1. Phase 1: Examination of the Current and Desired Conditions of Innovative Leadership in the Digital Era

This phase assessed the existing status, aspirational goals, and developmental needs of innovative leadership among teachers under the Ubon Ratchathani Primary Educational Service Area Office 1.

The findings indicated that the current level of innovative leadership was moderate overall, with the highest-rated dimensions including Creative instructional strategies and Collaborative teamwork. In contrast, the desired conditions were consistently rated at a high to very high level across all dimensions. The Priority Needs Index (PNI) revealed that the most critical areas for development were:

Technology integration

Vision for innovation

Cultivating an innovative organizational climate
Creative instructional strategies
Collaborative teamwork
These findings are summarized in Table 1.

Table 1 .Mean, Standard Deviation, Priority Needs Index Modified)PNI modified(, and Ranking of Priority Needs for Innovative Leadership of Teachers in the Digital Era under the Ubon Ratchathani Primary Educational Service Area Office 1

Components of Innovative Leadership	Current State			Desired State			$PNI_{modified}$	Priority Ranking
	$\overline{X}$	S.D.	level	$\overline{X}$	S.D.	level		
1. Technology integration	2.83	0.79	Moderate	4.75	0.45	Highest	0.68	1
2. Vision for innovation	2.94	0.80	Moderate	4.79	0.42	Highest	0.63	2
3. Fostering an innovative organizational climate	2.88	0.79	Moderate	4.66	0.50	Highest	0.62	3
4. Innovative Creativity	2.95	0.79	Moderate	4.74	0.45	Highest	0.61	4
5. Teamwork	2.95	0.82	Moderate	4.71	0.46	Highest	0.60	5
Total	2.91	0.80	Moderate	4.73	0.45	Highest	0.63	-

According to Table 1, the current state of innovative leadership among teachers in the digital era under the Ubon Ratchathani Primary Educational Service Area Office 1 was found to be at a moderate level overall ($\overline{X}$ = 2.91, S.D. = 0.80). Each of the five dimensions was also rated at a moderate level. The highest-scoring dimensions were innovative creativity and teamwork ($\overline{X}$ = 2.95, S.D. = 0.79), while the lowest-scoring was technology integration ($\overline{X}$ = 2.83, S.D. = 0.79).

In contrast, the desired state of innovative leadership was rated at the highest level ($\overline{X}$ = 4.73, S.D. = 0.45). The dimension with the highest mean was vision for innovation ($\overline{X}$ = 4.79, S.D. = 0.42), and the lowest was fostering an innovative organizational climate ($\overline{X}$ = 4.66, S.D. = 0.50). The highest PNI modified value (0.68) corresponded to technology integration, indicating it as the most critical area for development.

These results suggest that while teachers recognize the importance of digital innovation, they face challenges in effectively integrating technology into their teaching. The International Society for Technology in Education (ISTE, 2009) emphasizes the role of technology in enhancing learning outcomes and promoting student-centered innovation.

Similarly, Sinlarat (2011) proposed a four-pronged approach to instructional innovation: problem-based, research-based, productivity-based, and crystal-based learning, all of which rely heavily on digital tools and reflective teaching practices.

Therefore, continuous professional development in technology use is essential. Institutional support is also needed to empower teachers in creating and applying innovative practices.

4.2. Phase 2: Program Development

Based on PNI analysis, key developmental areas were identified and used to design a semi-structured interview protocol. Interviews were conducted with three teachers recognized for excellence in educational innovation. Their insights informed the design of a targeted enhancement program. Results from the qualitative synthesis are presented in Table 2.

Table 2. Summary of Key Issues Identified for Program Design to Enhance Innovative Leadership of Teachers in The Digital Era under The Ubon Ratchathani Primary Educational Service Area Office 1

Interview Topics	Summary of Key Issues from the Interviews
1 .Program Components	1 .Principles 2 .Objectives 3 .Program content 4 .Development procedures 5 .Evaluation methods
2 .Development Concept	Learning Based on the 70:20:10 Model -70 %of learning is derived from practical experience and learning by doing . -20 %of learning is acquired through interactions with others -10 %of learning comes from formal training or structured programs .

3 .Development Methods	1 .Vision for innovation 2 .Innovative Creativity 3 .Teamwork 4 .Fostering an innovative organizational climate 5 .Technology integration
4 .Duration	140 hours
5 .Assessment and Evaluation	1 .Pre-, during-, and post-development evaluation 2 .Evaluation of the satisfaction of the participants

The program integrates both theoretical foundations and best practices in educational innovation. Drawing on established models of professional development, it is grounded in innovation theory and frameworks such as the 70:20:10 learning model. This model, widely adopted in organizational learning, posits that 70% of learning occurs through practical experience, 20% through interaction with others, and 10% through formal instruction (Jennings, 2023; Wanichwasin, 2017).

Teachers increasingly recognize that educational innovation is central to effective teaching and can significantly enhance learning outcomes. However, sustainable change requires institutional readiness, particularly from administrators who play a pivotal role in fostering an innovation-driven school culture (Ubaidillah, 2018). Leadership that embraces and models innovation is essential to drive systemic improvements in education.

In designing the program, attention was given to the time demands of each module based on their respective priority levels. Consistent with Crawford Jr. (2013), who emphasized that program duration should align with developmental goals, the total training time was set at 140 hours to ensure depth and quality across all components.

Table 3. Mean and standard deviation of the appropriateness level of the program to enhance the Innovative Leadership of Teachers in the Digital Era under the Ubon Ratchathani Primary Educational Service Area Office 1

Program Components	Appropriateness			Feasibility		
	$\overline{X}$	S.D.	level	$\overline{X}$	S.D.	level
1. Principles	**4.60**	**0.51**	**Highest**	**4.67**	**0.51**	**Highest**
1. 1The Importance of Principles	4.40	0.55	High	4.60	0.55	Highest
1. 2Clarity of principles	4.60	0.55	Highest	4.80	0.45	Highest
1.3 Application of principles	4.80	0.45	Highest	4.60	0.55	Highest
2. Objectives	**4.40**	**0.55**	**High**	**4.60**	**0.55**	**Highest**
2. 1To enhance innovative leadership of teachers in the digital era	4.40	0.55	High	4.60	0.55	Highest
2. 2Coverage of innovative leadership components of teachers in the digital era	4.40	0.55	High	4.60	0.55	Highest
3. Program content	**4.70**	**0.44**	**Highest**	**4.78**	**0.33**	**Highest**
3. 1Consistent with the program objectives	4.60	0.55	Highest	4.60	0.55	Highest
3. 2Content arrangement is consistent with the elements	4.40	0.55	High	4.60	0.55	Highest
3. 3Content appropriate for the time period	5.00	0.00	Highest	5.00	0.00	Highest
3. 4Module 1Vision for innovation	4.60	0.55	Highest	5.00	0.00	Highest
3. 5Module 2Innovative Creativity	4.60	0.55	Highest	4.60	0.55	Highest
3. 6Module 3Teamwork	4.80	0.45	Highest	4.60	0.55	Highest
3. 7Module 4Fostering an innovative organizational climate	4.80	0.45	Highest	5.00	0.00	Highest
3. 8Module 5Technology integration	4.80	0.45	Highest	4.80	0.45	Highest
4. Development procedures	**4.84**	**0.18**	**Highest**	**4.92**	**0.18**	**Highest**
4. 1Module 1Vision for innovation	4.80	0.00	Highest	5.00	0.00	Highest
4. 2Module 2Innovative Creativity	4.80	0.00	Highest	5.00	0.00	Highest

4. 3Module 3Teamwork	4.80	0.45	Highest	4.80	0.45	Highest
4. 4Module 4Fostering an innovative organizational climate	4.80	0.45	Highest	4.80	0.45	Highest
4. 5Module 5Technology integration	5.00	0.00	Highest	5.00	0.00	Highest
5. Evaluation methods	**4.80**	**0.27**	**Highest**	**4.90**	**0.22**	**Highest**
5. 1Pre- and post-training knowledge and skills assessment	4.60	0.55	Highest	4.80	0.45	Highest
5. 2Evaluation of satisfaction of participants in the program	4.80	0.45	Highest	5.00	0.00	Highest
Total	**4.67**	**0.39**	**Highest**	**4.77**	**0.36**	**Highest**

According to Table 3, the evaluation of the program's appropriateness and feasibility by five experts revealed high levels of approval. The average score for appropriateness ranged from 4.40 to 5.00, and for feasibility from 4.60 to 5.00, indicating that the program is both highly suitable and practical for implementation. These findings suggest that the program is well-designed and appropriately tailored to the professional context of teachers under the Ubon Ratchathani Primary Educational Service Area Office 1.

This success may be attributed to the program's grounding in the Design Thinking framework. As Asanok (2018) explains, design thinking is a structured innovation process that places people at the center of problem-solving. It involves identifying real problems, generating innovative solutions, developing prototypes, and testing ideas. This approach ensured that the program addressed genuine teacher needs and enhanced the relevance of its components.

Additionally, the program applied the five-stage development model by Keating and Barr (1998), which includes evaluation, planning, implementation, post-program evaluation, and decision-making. This model allowed for systematic assessment and continuous improvement of the program's content and delivery, thereby reinforcing its effectiveness and adaptability.

5. Conclusion

The study found that the current level of teachers' innovative leadership was moderate, while the desired level was high across all measured dimensions. The most needed areas for improvement, ranked from highest to lowest, were: (1) technology integration, (2) vision for innovation, (3) fostering an innovative organizational climate, (4) innovative creativity, and (5) teamwork.

Also, in response to these findings, a professional development program was developed, comprising five key components: principles, objectives, program content, development procedures, and evaluation methods. The program included five modules: Module 1 – Vision for Innovation, Module 2 – Innovative Creativity, Module 3 – Teamwork, Module 4 – Fostering an Innovative Organizational Climate, and Module 5 – Technology Integration.

The program was evaluated by experts and received high ratings in both appropriateness and feasibility, suggesting it is well-suited to address the professional development needs of teachers in the digital era.

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