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Developing Teachers' Learning Empowerment by Design Thinking for Teachers in Educational Opportunity Expansion School in Thailand: Participatory Action Research

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ABSTRACT

The research methodology used was participatory action research. The first step, the research investigates the elements and behavioral indicators of learning empowerment for teachers. A questionnaire was administered to 800 respondents, consisting of 400 administrators and 400 teachers respectively. The researchers used stratified random sampling techniques to select the respondents. The initial identified four factors and 40 indicators of a teacher-learning empowerment model. Step 2, investigate the need for design thinking-based learning empowerment for teachers in educational opportunity expansion school. The need assessment results showed that Collaborative goal setting (PNImodified = 0.32) is the most essential factors of teacher-learning empowerment model. This is followed by Providing opportunities for creative growth (PNImodified = 0.28) and real experience-based learning (PNImodified = 0.26). The least capacity factor is Growth mindset (PNImodified = 0.25). In Step 3, investigate how design thinking-based might enhance learning empowerment for teachers in educational opportunity expansion school. Learning real experiences. The project participants consisted of 19 administrators and teachers from Ban Khanuan School. In conducting the research, through joint activities between teachers and school administrators, it was found that 1) school administrators promoted teachers to be able to apply the design thinking process in teaching and learning; 2) school administrators actively supported and promoted teachers' self-development; 3) administrators and teachers were able to effectively use the 5-step design thinking process; and 4) each step was clearly implemented.

Keywords: Design Thinking, Teacher Learning Empowerment, Growth Mindset, Participatory Action Research, Learning Real Experiences, Collaborative Goal Setting

INTRODUCTION

The Teacher learning empowerment aims to enhance teachers' professional skills, confidence, and autonomy in their roles (R. Ahmadi and.N. F. Arief, 2022). According to (T. Stobierski, 2022), design thinking is a problem-solving approach in which teachers seek to understand the end users of a potential service—typically students—including their goals, challenges, and aspirations. Using this understanding, they co-create effective solutions. Given the significance of design thinking, scholars have proposed various ideas to cultivate these skills across sectors—public, private, or nonprofit—regardless of gender, age, or social status. One key group targeted for

design thinking development is students, who represent the future driving force of national development (S. Srikongpan, Phrakhrusutheejariyawattana, and A. Suksen, 2024). In this context, our research aims to explore how design thinking can empower teachers' learning and professional development in schools that focus on expanding educational opportunities. A participatory action research approach is well-suited for this goal, as it actively involves teachers in identifying challenges, co-developing solutions, and refining their teaching practices through iterative learning cycles.

To empower teachers, school administrators typically focus on areas such as encouraging innovative teaching methods, enhancing problem-solving and critical thinking skills, and fostering collaboration among teachers (N. Hatsanmuang and W. Sanrattana, 2023). As a result, teachers become active agents of change, leading improvements in the teaching and learning process (Supakicco, 2023). Previous studies have examined the role of design thinking in education, often focusing on student-centered learning, curriculum innovation, or administrative problem-solving (B. Thammabut and W. Thacha, 2023). While some research addresses teachers' professional development, much of it occurs in controlled or experimental settings rather than real school environments (J. Orgoványi-Gados, 2021). Moreover, many studies position teachers merely as facilitators of design thinking for students, rather than as participants engaged in the learning and innovation process themselves. Few studies have actively involved teachers in co-creating knowledge and solutions through design thinking (C. N. Blundell, 2024).

To enhance the novelty of this research, we focus on the application of design thinking in schools that aim to expand educational opportunities. While design thinking has been widely applied in elite or well-resourced schools, its impact on equity-focused institutions remains underexplored (C. N. Blundell, 2022). Design thinking is a human-centered, iterative approach to problem-solving, typically structured into five stages: empathize, define, ideate, prototype, and test (J. Zeng, 2023). In the context of education, it is used to address school-specific challenges (I. Prasetia and Akrim, 2024), promote student-centered learning (M. Sahrul, M. Mawar, R. W. Tuti, and N. Handayani, 2021), and cultivate creativity and collaboration among teachers (C. Cheng and J. Zhao, June 2023).

In Thailand, educational opportunity expansion schools are established to ensure equitable access to education, especially for underserved communities. These schools often struggle with limited resources, diverse student needs, teacher retention, and motivation challenges (C. Cheng and J. Zhao, June 2023). Consequently, school administrators must work to close educational gaps and provide meaningful learning opportunities for all students (C. Cirkony, R. Tytler, and P. Hubber, 2022). As part of the initial research phase, the researchers conducted a comprehensive document analysis, reviewing relevant literature, educational reports, and policy documents. This analysis helped identify key factors and indicators essential for developing a teacher learning empowerment model, forming the conceptual foundation for this study (H. Morgan, 2022).

METHOD

Research Design and Instruments

Developing Teachers' Learning Empowerment by Design Thinking for teachers In Educational Opportunity Expansion School in Thailand by using participatory action research based on the participatory action research concept (Kemmis, S., McTaggart, R., and Nixon, R., 2014). The research was divided into 3 phases according to the research objectives as follows: 1. investigates the elements and behavioral indicators of teachers' learning empowerment. 2. investigate the need for teachers' learning empowerment by design thinking for teachers in educational opportunity expansion school. and 3. investigating how teachers' learning empowerment by design thinking for teachers in educational opportunity expansion school.

Population and Samples

The first objective of this is to investigate the elements and behavioral indicators of teachers' learning empowerment and to assess the consistency of the behavioral indicator model with empirical data. The target population consisted of school administrators and teachers from schools that expand educational opportunities in the Northeastern region of Thailand. The sample size was determined based on the recommended ratio of sample units to the number of parameters, which is 20:1 for Confirmatory Factor Analysis (CFA). In this study, there were 40 parameters, thus requiring a sample size of at least 800 participants. Accordingly, the sample consisted of 400 school administrators and 400 teachers, totaling 800 participants. A multi-stage sampling technique was used: 1) Simple Random Sampling was applied to select provinces in the Northeastern region. 2) Proportional Stratified Random Sampling was used to select schools that expand educational opportunities within those provinces.

To achieve the second objective—to investigate the need for teachers' learning empowerment by design thinking for teachers in educational opportunity expansion school and investigating how design thinking-based might enhance learning empowerment for teachers in educational opportunity expansion school. Learning real experiences. —a case study approach was employed. The selected case was Ban Khanuan School, located in Nong Na Kham District, Khon Kaen Province, under the Khon Kaen Primary Educational Service Area Office 5. This school was chosen through purposive sampling, based on the following criteria: 1) It had successfully passed the external quality assessment conducted by the Office for National Education Standards and Quality Assessment (ONESQA). 2) It demonstrated readiness and willingness to participate in teacher learning empowerment through design thinking within a participatory action research framework. 3) It was suitable and feasible for the researcher to conduct regular fieldwork. The sample for the case study consisted of 19 participants, including 1 school administrator and 18 teachers and educational personnel.

Using a case study of schools to expeople.cational opportunities Under the Office of the Primary Education Area, Khon Kaen Area 5 , 1 school that has passed the external assessment standards of the Office for National Education Standards and Quality Assessment (ONESQA) is a school that intends to participate in the empowerment of teachers' learning by designing through participatory action research and is a school that is suitable and feasible for the researcher to conduct fieldwork periodically by purposive sampling, namely Ban Khanuan School, Nong Na Kham District, Khon Kaen Province, consisting of 1 school administrator and 18 teachers and educational personnel, totaling 19 people.

Content Scope

Teacher Learning Empowerment by design thinking in schools that expand educational opportunities. The researcher analyzed and synthesized the following documents and related research. Teachers' learning empowerment has the following components: 1) Collaborative goal setting 2) Providing opportunities for creative growth 3) Real experience-based learning and 4) Growth mindset.

Design thinking is an intervention to help teachers change their behavior and performance in a positive way and create learning. Consists of 5 steps These include the Empathize stage, define stage, Brainstorming stage, Ideate stage, Prototype stage, and Test stage.

Teacher Learning Empowerment by design thinking in schools, expanding educational opportunities, research using the Participatory Action Research model, consisting of 2 cycles: survey stage, planning stage, leading action plans and observing results, reflection stage, and evaluation stage, together with the 5-step design thinking process. These include the Empathize stage, define stage, Ideate stage, Prototype stage, and Test stage.

Data Collection and Data Analysis

In the initial phase, data collection focused on exploring the need assessment for teacher learning empowerment. The PNI modified calculation was employed to measure the gap between the current and the desired conditions (J. Buckley, 2024). A PNI value of at least 0.30 indicates that a need factor is significant, the greater the value above 0.30, the more critical the need. The formula used for this calculation was: PNImodified = (I - D) / D, where I represent the ideal condition and D the current condition (H. Soyngam, W. Ariratana, and D. Thawinkarn, 2021).

The results of this analysis guided the identification of effective approaches for the development of teacher learning empowerment.

Additionally, descriptive statistics such as mean scores and standard deviation were used to summarize the data. The mean scores were ranked to easily identify the highest and lowest values among ordinal variables, enhancing interpretation. The standard deviation was applied as it is the most effective measure of variability, providing insight into the distribution of data values (K. Khantawong, S. Sirisooksilp, and D. Thawinkarn, 2021).

To validate the teacher learning empowerment model, researchers employed confirmatory factor analysis (CFA) to test the model's goodness-of-fit with the empirical data (R. P. McDonald and M. -H. R. Ho, 2002). According to, absolute fit indices are used to assess how well the proposed model aligns with the actual data and to determine which model demonstrates the best fit.

RESULTS AND DISCUSSION

Phase 1: Investigates the Elements and Behavioral Indicators of Teachers' Learning Empowerment and Examined the Consistency of the Behavioral Indicator Model with Empirical Data.

Results of the Investigations of the Elements and Behavioral Indicators of Teachers' Learning Empowerment in Educational Opportunity Expansion Schools.

Based on research, documents, textbooks, theoretical concepts, and research related to learning empowerment, and in-depth interviews with experts, the scale was tested for content validity by calculating the Index of Congruence (IOC) of .91. The reliability was assessed using Cronbach's Alpha Coefficient of 0.96. Four components were identified: Collaborative goal setting (10 indicators and 10 behaviors); opportunities for creative development (10 indicators and 10 behaviors); real experience-based learning (10 indicators and 10 behaviors); and growth mindset (10 indicators and 10 behaviors). Table 1 shows the following components:

Table 1. The Elements and Behavioral Indicators of Teachers' Learning Empowerment

Component	Indicator	Behavioral indicators
Collaborative goal setting	1. Defining the vision challenge	1. School administrators and teachers jointly set a challenging vision.
	2. Motivation	2. School administrators create incentives to encourage teachers to participate in learning.
	3. Joint goal setting	3. School administrators and teachers jointly set measurable goals.
	4. Determination of procedures and time periods	4. School administrators and teachers jointly determine the steps and timeframe for achieving the goals.
	5. Mutual understanding	5. School administrators and teachers work together to create a common understanding in their work.
	6. Planning and distributing work	6. School administrators and teachers work together to plan and distribute work according to their abilities.
	7. Prioritizing and delegating tasks	7. School administrators and teachers work together to prioritize and assign tasks to reduce duplication.
	8. Joint problem review	8. School administrators and teachers jointly review the problems to find a way to solve them together.
	9. Reflection of opinions	9. School administrators are open to listening to teachers' reflections on a regular basis.
	10. Can identify the causes of success and failure.	10. School administrators and teachers can identify the causes of success and failure.
Providing opportunities for creative growth	1. Finding solutions to problems quickly	1. School administrators encourage teachers to think and find ways to solve problems quickly.
	2. Experimenting with creative problem solving	2. School administrators encourage teachers to experiment with creative problem-solving methods.
	3. Can express ideas freely.	3. School administrators encourage teachers to express their ideas freely.
	4. Thinking, adapting and applying to create new things	4. School administrators encourage teachers to think, adapt and apply new ideas.
	5. Initiating new innovations	5. School administrators encourage teachers to be innovative and creative.
	6. Seeking one's own needs	6. School administrators encourage teachers to seek their own needs.
	7. Using imagination to create innovation	7. School administrators encourage teachers to use their imagination to create innovations.
	8. Know how to assess risks and develop new things.	8. School administrators encourage teachers to know how to assess risks, experiment and develop new things constantly.
	9. Use of subtlety	9. School administrators encourage teachers to use meticulousness to create complete innovations.
	10. Synthesis of complex ideas	10. School administrators encourage teachers to be able to synthesize complex ideas.
Real experience-based learning	1. Support for action	1. School administrators support teachers in gaining hands-on experience.
	2. Learning from practical practice	2. Educational administrators participate in promoting learning from actual practice.
	3. Participatory observation	3. School administrators participate in observing the teachers' work.
	4. Listening to problems	4. School administrators listen to problems arising from

		work and analyze the causes.
	5. Problem diagnosis	5. School administrators provide opportunities for teachers to participate in diagnosing problems and finding appropriate solutions.
	6. Reflection on learning outcomes	6. School administrators reflect on the learning outcomes from teachers' work.
	7. Creation of new knowledge	7. School administrators encourage teachers to create new knowledge that is gained from actual practice.
	8. Learning management planning	8. School administrators participate in planning teachers' learning management.
	9. Monitoring and supervision	9. School administrators join in supervising and following up on the results of teachers' learning.
	10. Application of new concepts	10. School administrators encourage teachers to apply new concepts in teaching and learning.
Growth mindset	1. Always develop your own abilities.	1. School administrators encourage teachers to constantly develop their own abilities.
	2. Set goals that challenge your abilities.	2. School administrators encourage teachers to set challenging goals for themselves.
	3. Learning sequencing	3. School administrators recommend that teachers prioritize learning consistently.
	4. Perseverance	4. School administrators support teachers' continuous learning efforts.
	5. Accepting and facing failure	5. School administrators encourage teachers to accept and face failure.
	6. Continuously develop yourself.	6. School administrators support teachers to continuously develop themselves.
	7. Listening to criticism	7. School administrators encourage teachers to listen to criticism and criticism to constantly develop themselves.
	8. Inspiration	8. School administrators promote and inspire success.
	9. Encourage continuous learning.	9. School administrators encourage teachers to be continuously enthusiastic about learning.
	10. Promote continuous potential development.	10. Educational administrators promote continuous development of teachers' potential.

Results of Examined the Consistency of the Behavioral Indicator Model with Empirical Data.

The researchers used the obtained components and indicators to create a questionnaire for confirmatory factor analysis. The sample group under factor analysis was compared with the studied variables at a ratio of 20:1 (Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E., 2010).

The results showed that the mean, standard deviation, and coefficient of distribution of the indicators of teachers' learning empowerment by design thinking for teachers in schools for educational opportunity expansion were consistent. This research used the appropriateness criteria of (Khonkarn, S., 2004), using a mean of 3.00 or higher and a coefficient of distribution of 20% or lower to determine the selection criteria for the structural relationship model for factor analysis. Overall, the components were found to be consistent. The mean value was between 4.42 and 4.52 and the coefficient of dispersion was between 15.11 and 17.16%, which were appropriate and could be used for further confirmatory factor analysis, as shown in Table 2.

Table 2. The Mean, Standard Deviation, and Coefficient of Distribution of the Indicators of Teachers' Learning Empowerment by Design Thinking

at	Indicator	$\bar{x}$	S.D.	C.V.
1.	Collaborative goal setting	4.44	0.75	16.82
2.	Providing opportunities for creative growth	4.42	0.76	17.16
3.	Real experience-based learning	4.51	0.68	15.11
4.	Growth mindset	4.52	0.71	15.63

The researcher then analyzed the data for confirmatory factor analysis (CFA) to examine the consistency of the components. It was found that the consistency index of the components of empowering teachers' learning with design thinking in the schools for expanding educational opportunities met the specified criteria. The result

exposed that the model fits between the obtained values of collected data and the expected values as follows, $\chi 2$ = 175.565, df = 141, $\chi 2/df$ = 1.245, CFI = 1.000, TLI = 1.000, RMSEA = 0.000, and SRMR = 0.016. These tests were used to determine how associated real values fit the expected values in the empowering teacher-learning model. The researchers referred to the following specialists' rules of thumb and their recommended cut-off values for evaluating fit indices in the structural equation model as elucidated in Table 3.

Table 3. The Result Shows that the Model Fits between the Obtained Values of Collected Data and the Expected Values

Harmony Index	Criterion	Analysis Results	Results of Consideration
x^2-Test	Not significant P > 0.05	x^2 = 175.565 df = 141 p-value = 0.5404	pass
x^2 / df	< 2.00	1.245	pass
RMSEA	≥ 0.05	0.000	pass
SRMR	≤ 0.05	0.016	pass
CFI	≥ 0.95	1,000	pass
TLI	≥ 0.95	1,000	pass

Phase 2: Investigate the Need for Teachers' Learning Empowerment by Design Thinking of Teachers in Educational Opportunity Expansion School.

Evaluation Results of the Current and Desired Situations Teachers' Learning Empowerment by Design Thinking of Teachers in Educational Opportunity Expansion School.

The evaluation of the current level of learning empowerment for teachers at Ban Khanuan School indicated that, overall, the empowerment level was high. When ranked by average score from highest to lowest, the following aspects were at a high level: growth mindset, Providing opportunities for creative growth, and real experience-based learning. However, the aspect of Collaborative goal setting was rated at a moderate level.

In terms of the desired condition, all aspects were rated at the highest level. Ranked by average score from highest to lowest, the desired aspects were Growth mindset, real experience-based learning, providing opportunities for creative growth, and Collaborative goal setting, as elucidated in Table 4.

Table 4. Evaluation Results of the Current and Desired Conditions for Teachers' Learning Empowerment by Design Thinking of Teachers at Ban Khanuan School.

At	Teacher learning empowerment	Practice level (N=19)					
		Current condition			Desirable condition		
		$\bar{x}$	S.D.	level	$\bar{x}$	S.D.	level
1.	Collaborative goal setting	3.50	0.74	Moderate	4.62	0.51	Highest
2.	Providing opportunities for creative growth	3.66	0.92	High	4.62	0.50	Highest
3.	Real experience-based learning	3.58	0.78	High	4.62	0.49	Highest
4.	Growth mindset	3.75	0.84	High	4.65	0.49	Highest

Need Assessment Results for Teachers' Learning Empowerment by Design Thinking of Teachers at Ban Khanuan School.

The analysis results of the need for enhancing teachers' learning empowerment by design thinking of teachers at ban Khanuan school indicated that Collaborative goal setting is the most vital factor (PNImodified = 0.32). This was followed by Providing opportunities for creative growth factor (PNImodified = 0.28) and Real experiences learning factor (PNImodified = 0.26). The least capacity factor is the Growth mindset (PNImodified = 0.25), as elucidated in Table 5.

Table 5. Results of the Analysis of the Current Situation, Desired Situation and the Necessity to Strengthen the Learning Potential of Teachers at Ban Khanuan School.

At	**Teacher learning empowerment**	Desirable condition **(I)**	Current condition **(D)**	**PNI** $_{\text{Modified}}$	Order number
1.	Collaborative goal setting	4.62	3.50	0.32	1
2.	Providing opportunities for creative growth	4.62	3.66	0.28	2
3.	Real experience-based learning	4.62	3.58	0.26	3
4.	Growth mindset	4.65	3.75	0.25	4

Phase 3: Investigating how Design Thinking-Based Might Enhance Learning Empowerment for Teachers in Educational Opportunity Expansion School.

The implementation of a design thinking-based approach to enhance teacher learning empowerment at Ban Khanuan School was carried out through two cycles, as outlined below:

(Cycle 1)

Preparation Stage (Pre-Planning): This stage consisted of four key steps:

1. Building relationships and exchanging knowledge.
2. Creating awareness and mutual understanding.
3. Developing a research work plan.
4. Conducting evaluation and summarizing findings.

Planning Stage: This Stage Involved Five Steps:

1. Analyzing the current and expected conditions.
2. Defining and understanding key problems.
3. Evaluating issues that need to be addressed or developed.
4. Planning operations, projects, or activities.
5. Evaluating and summarizing the planning outcomes.

Acting and Observing Stage: This stage consisted of five steps:

1. Setting guidelines for implementation.
2. Determining formats and methods.
3. Conducting observations during implementation.
4. Executing activities.
5. Observing, reporting results, and evaluating performance.

Reflection Stage: This stage involved three key activities:

1. Synthesizing knowledge gained.
2. Presenting findings or reports.
3. Evaluating and summarizing the outcomes.

(Cycle 2)

Re-Planning Stage: In the second cycle, re-planning was conducted through the following five steps:

1. Reanalyzing the current and expected conditions.
2. Redefining and understanding the refined problems.
3. Reassessing issues to be addressed or further developed.
4. Replanning projects or activities.
5. Re-evaluating and summarizing the plans.

New Acting and Observing Stage: This stage mirrored the first cycle's implementation and included five steps:

1. Setting revised implementation guidelines.
2. Defining updated formats and methods.
3. Observing and monitoring activities.
4. Carrying out the activities.

5. Observing, reporting results, and conducting evaluation.

Reflection Stage: This stage included three key steps:

1. Synthesizing new knowledge.
2. Presenting the updated report.
3. Evaluating and summarizing the second cycle's outcomes.

Conclusion Stage: The final conclusions drawn from the two-cycle process include:

1. Changes in practice among teachers.
2. Learning outcomes derived from practice.
3. Knowledge gained through actual implementation.

Phase 4: Investigating the Results of Changes that Occur from Teachers' Learning Empowerment by Design Thinking of Teachers in Schools that Expand Educational Opportunities.

Current and Expected Conditions

Current Condition: Ban Khanuan School has not yet achieved its targeted performance outcomes. Therefore, it is necessary to develop the teaching and learning processes by empowering teachers—enhancing their knowledge, skills, and teaching capacity using design thinking. In addition, fostering a professional learning community among teachers is essential for driving the development and improvement of instructional practices.
Expected Condition: As a result of the workshops, the expected outcomes are improvements in both student learning achievements and teachers' instructional practices, achieved using teacher learning empowerment integrated with design thinking. This approach is intended to support active learning that centers on students and encourages a variety of meaningful and engaging learning activities.

Changes and Learning from Actual Practice

Expected Changes: The overarching goal is to enhance student learning achievement and improve teachers' instructional practices by empowering learning through design thinking. This involves:

1. Implementing active learning that emphasizes student engagement.
2. Incorporating a variety of instructional activities.
3. Developing a structured teaching process that enables teachers to apply design thinking in practice.
4. Supporting teachers in creating new innovations tailored to their students' needs by setting clear goals, steps, tools, and appropriate assessment methods.
5. Establishing a professional learning community to promote collaboration and continuous improvement. To achieve this, the research team co-developed three action plans to enhance teacher learning using the design thinking approach.

Unexpected Changes

Unexpected Outcomes from the study emerged at both the individual and group levels.

Individual-Level Outcomes

Students:

In early childhood education, approximately 70% of children exhibited development appropriate to their age.

In primary education, specific improvements were observed:

- In foreign languages, students demonstrated increased vocabulary retention.
- In science, Primary 6 students were able to clearly explain the water cycle, reflecting a stronger understanding of scientific concepts.

Teachers: Teachers developed the ability to:

1. Design lesson plans aligned with the design thinking framework,
2. Integrate design thinking into existing curricula.
3. Create innovative teaching materials and diversify their instructional strategies. These outcomes highlight the need for a teacher learning network to sustain ongoing professional development.

School Administrators: After participating in the project, three administrators showed increased knowledge of design thinking and its application in empowering teacher learning. Key outcomes included:

1. Improved collaboration with teachers through better planning and role clarity.
2. Promotion of open communication and reflective feedback.

3. Clear articulation of timelines, performance indicators, and analysis of success or failure factors.

Group-Level Outcomes: At the group level, teachers were empowered to:

1. Take the lead in designing and conducting learning activities based on design thinking.
2. Incorporate diverse instructional strategies to meet the needs of all learners.
3. Collaboratively design and implement educational innovations tailored to specific student contexts.

As a result, teachers:

1. Co-created learning activities.
2. Applied differentiated instruction.
3. Engaged in reflective practice and knowledge sharing. This led to the development of 1) Context-specific instructional innovations, 2) Effective teaching strategies, tools, and evaluation methods, and 3) A sustainable professional learning community focused on enhancing educational quality and outcomes.

Learning by Doing: Insights from the Workshop at Ban Khanuan School

Teachers and School Administrator: Through joint participation, both teachers and school leaders developed professionally by engaging in the following practices:

Teachers were able to:

1. Clarify their roles and set specific work goals.
2. Align instructional planning with students' needs using design thinking.
3. Apply their learning in real-world contexts to support deeper thinking and planning.
4. Design structured, goal-oriented lesson plans incorporating design thinking.
5. Utilize media and technology to support instructional innovation.
6. Deliver learner-centered lessons using diverse formats.
7. Exhibit increased confidence in sharing ideas, collaborating, and working effectively in teams. These practices fostered a learning culture in which teachers continuously improved their instructional methods.

School Administrators played a crucial role in fostering a supportive environment for teacher learning and innovation. Their learning and contributions included:

1. Establishing clear visions, goals, and development timelines.
2. Efficiently allocating tasks to reduce redundancy.
3. Promoting open communication and reflective dialogue.
4. Supporting teachers in developing creative problem-solving and adaptability.
5. Encouraging innovation tailored to specific teacher and student needs.
6. Assisting teachers in translating complex ideas into practical innovations.
7. Providing hands-on support through planning, observation, and implementation.
8. Monitoring instructional impact and using feedback for future improvements.
9. Inspiring a mindset of lifelong learning and continuous professional development. These leadership practices laid a strong foundation for sustainable growth, both individually and institutionally.

CONCLUSION

Summary of Teacher Learning Empowerment at Ban Khanuan School implemented a teacher learning empowerment initiative built around four core components:

1. Collaborative goal setting.
2. Providing opportunities for creative growth.
3. Real Experience-Based Learning.
4. Growth Mindset.

Among these components, the area with the greatest need for development was Joint Goal Setting. To address this, the school conducted three main activities:

1. Activity 1: A workshop on instructional management using the design thinking approach.
2. Activity 2: Integration of design thinking into teachers' daily instructional practices.
3. Activity 3: Establishment of Professional Learning Communities (PLCs) to foster continuous professional development and collaboration among teachers.

As a result of these activities, both teachers and administrators at Ban Khanuan School gained valuable knowledge and experience through hands-on implementation. Key outcomes included: 1) Teachers successfully designing and delivering learning activities based on the design thinking model, 2) School administrators actively supporting and promoting teacher development, 3) Effective application of the five-step design thinking process (Empathize, Define, Ideate, Prototype, Test), and 4) Clear and systematic implementation through defined sub-steps within each stage.

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REFERENCES

B. Thammabut and W. Thacha. (2023). Enhancing teachers' learning to develop students to become successful students. World Journal of Education, 13(3), 13–23.

C. Cheng and J. Zhao. (June 2023). The impact of professional learning communities on pre-service teachers' professional commitment. Frontiers in Psychology, 14.

C. Cirkony, R. Tytler, and P. Hubber. (2022). Designing and delivering representation-focused science lessons in a digital learning environment. Educational Technology Research & Development, 70(3), 881–908.

C. N. Blundell. (2022). A scoping review of design thinking in school-based teacher professional learning and development. Professional development in education, ahead-of-print, 1-16.

C. N. Blundell. (2024). Using design thinking to embrace the complexities of teacher learning practice with digital technologies. Professional Development in Education, 1-19.

Gibson, C.H. (1991). A concept analysis of empowerment. . Journal of Advanced Nursing, 16, 354-361.

H. Morgan. (2022). Conducting a qualitative document analysis. The Qualitative Report, 27(1), 64–77.

H. Soyngam, W. Ariratana, and D. Thawinkarn. (2021). Policy recommendation for educational management to promote occupations in the community learning centers for non-formal and informal education. International Educational Research, 4(1), 79–87.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E.,. (2010). Multivariate data analysis: A global perspectives. Upper Saddle River, NJ: Pearson Education, International.

I. Prasetia and Akrim. (2024). The impact of teacher empowerment on school effectiveness: A mixed methods study. Journal of Education and E-Learning Research, 11(4), 655–666.

J. Buckley. (2024). Conducting power analysis to determine sample sizes in quantitative research: A primer for technology education researchers using common statistical tests. Journal of Technology Education, 35(2), 81-109.

J. Orgoványi-Gados. (2021). An analysis of a teachers' problem-solving enhancement programme comparing novice and expert teachers' experiences. Acta Universitas de Carolo Eszterházy Nominatae. Sectio paedagogica, 44, 49–68.

J. Zeng. (2023). A theoretical review of role of teacher professional development in EFL students. Heliyon, 9(5), e15806.

K. Khantawong, S. Sirisooksilp, and D. Thawinkarn. (2021). Needs assessment of internal supervision in secondary schools under the Office of Basic Education Commission. International Educational Research, 4(1), 71–78,.

Kemmis, S., McTaggart, R., and Nixon, R. (2014). The action research planner: Doing critical participatory action research. New York: Springer.

Khonkarn, S. (2004). The development of indicators for public higher education institutions [Doctoral dissertation, Srinakharinwirot University]. Bangkok: Thailand.

M. Sahrul, M. Mawar, R. W. Tuti, and N. Handayani. (2021). Empowerment of school committees in improving the quality of education basic schools of Indonesia-Malaysia State border. Indonesia Journal of Law and Economics Review, 7, 23-34.

N. Hatsanmuang and W. Sanrattana. (2023). Empowering teachers learning to develop innovative skills for students. World Journal of Education, 13(2), 56–67.

Phanthong, K. (2008). The empowerment process for health among elderly living alone in Ban Wiang Sawan community, Mae Mo District, Lampang Province [Master's thesis, Chiang Mai University]. Chiang Mai: Thailand.

Phetkaew, R. (2010). The development of an empowerment model for teachers in schools transferred from the Office of the Basic Education Commission to local administrative organizations [Doctoral dissertation, Chulalongkorn University]. Bangkok: Thailand.

R. Ahmadi and.N. F. Arief. (2022). Teaching empowerment to improve the quality of education and school progress. EDUTEC Journal of Education and Technology, 6(2), 431–439.

R. P. McDonald and M. -H. R. Ho. (2002). Principles and practice in reporting statistical equation analyses. Psychological Methods, 7(1), 64-82.

S. Srikongpan, Phrakhrusutheejariyawattana, and A. Suksen. (2024). Empowering teacher learning to develop students' design thinking skills. World Journal of Education, 12(2), 151–162.

Supakicco, M. K. (2023). Empowering teachers' learning to develop students' inspirational skill. World Journal of Education, 13(2), 31-40.

T. Stobierski. (2022, January 11). Design thinking skills for business professionals. Retrieved from https://shorturl.at/ehkN5

Wongyai, W., & Patarapichayatham, M. (2019). Creative learning empowerment. Center for Curriculum and Learning Innovation Leadership.

