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AN INTEGRATED ACTIVE LEARNING MODEL FOCUSED ON LEARNING OUTCOMES FOR SCHOOLS IN THAILAND

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ABSTRACT

This study proposed the development and implementation, as well as evaluation of the integrated active learning model focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand. The research had a multi-phase mixed-methods research method to develop the learning model to provide guidelines for schools, teachers, and stakeholders to identify themes that were consistent with local policies and contexts. There was also the learning management that students' practice could be applied in everyday life and had commercial potential. The evaluation results indicated that improvement was significant in all aspects of students' learning outcomes. This model consisted of principles and concepts, objectives, systems and mechanisms, guidelines and activities for integrated outcome-based active learning management, success indicators, success conditions for model implementation, forms and documentation, and terminology and supporting explanations. The research results emphasized the effectiveness of this model, making it an example model for other schools. Although there were some concerns about the selection of themes, overall, there was a good trend in the implementation of the integrated active learning model focused on learning outcomes. The comparison results of student learning outcomes before and after model implementation indicated that the mean of the post-test was more than the pre-test, overall developed at 18.28 percent.

Keywords: An integrated active learning; model; learning outcomes; lower secondary students; schools under local administrative organizations

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1. INTRODUCTION

According to the force of global education, Thailand has established the 20-Year National Strategy and the 13th National Economic and Social Development Plan, which prioritize the development of high-quality human resources through competency-based education. In the context of a rapidly changing modern world, education plays a crucial role in equipping the new generation with the skills and competencies needed to cope with emerging challenges. Moreover, Sustainable Development Goal 4 (SDG 4), by 2030, all people should have access to high-quality, inclusive education, equitable quality education, and opportunities for lifelong learning,

(United Nations, n.d.). This approach seeks to enable learners to apply their knowledge in real contexts in their own ways (Office of the National Economic and Social Development Council, 2022).

The 2018 Thai National Education Standards have defined the desired characteristics of Thai learners, emphasizing analytical thinking, lifelong learning ability, and adherence to morality and ethics (Office of the Education Council, 2018). At the same time, the reform of teacher competency assessment has shifted the focus to the development of teaching skills, with the aim of raising learners' learning outcomes through effective teaching methods ("Teachers' council of Thailand regulations on professional licenses (No. 2) 2564 B.E.", 2021). Teachers are encouraged to use strategies that actively engage learners and create an environment that fosters critical thinking and creativity. However, the PISA 2022 results show significant declines in Thailand's educational performance in all areas, including mathematics, reading, and science, with scores below the OECD average. The 2022 Proficiency Test (PISA) results show that Thai students scored an average of 394 in mathematics, 379 in reading and 409 in science, which is lower than the average of OECD countries with an average score of 472 in mathematics, 476 in reading and 485 in science. Moreover, the results of the creative thinking assessment found that Thailand was ranked 54th out of 64 countries, with an average score of 21 which is lower than the OECD average score of 33. (OECD, 2022), reflecting the urgent need to improve teaching methods and resource allocation.

Accordingly, the sixth strategy of the educational development plan 2023–2027 for local administrative organizations in Chiang Mai province (Local Administrative Organization in Chiang Mai Province, 2022), emphasized on developing the efficiency of the education management system aims to make the structure, roles and education management system flexible, clear and auditable. The education management system was efficient and effective, affecting the quality and standards of education, and all sectors of society participate in education management that responds to the needs of the people and the area.

Active learning is a concept to develop the quality of education and learners in the 21st century, which based on the progressivism philosophy and constructivist hypothesis. Dynamic learning was raised and passed on to form meaning significantly until it got to be a talk of dynamic learning. This talk is passed on through the devices within the frame of laws, arrangements, and national procedures to drive and change instruction in Thailand into classroom hone (Kongrat, 2024). It may be concluded that active learning is a learning process that emphasizes learners' participation in thinking, analyzing, and applying knowledge through various activities, which helps promote independence of thought and action, encourages cooperation, and stimulates learners' enthusiasm for learning. Active learning also prepares students for the challenges and demands of higher education and the workforce.

The term "Integrated Active Learning Model" is a technique that educators and administrators use to induce students' curiosity and encourage active participation in class by delivering material that is related to and pertinent to their everyday lives. Students that use this kind of learning management system learn more effectively and are better equipped to use what they have learned in the real world. Because lower secondary school, or grades 1–3, is a crucial time for childrens' learning and perception development, it is essential to employ an integrated active learning strategy with these students. Long-term sustainable and successful learning development is facilitated by active learning, which increases students' interest and engagement in the teaching and learning process.

As regards to the affects of active learning on high school students' outcomes, Orhan and Sahin (2018) indicated that high school students can be motivated to learn science through active learning, but little is known about how well it can teach scientific ideas like genetics and biotechnology. Participants in active learning classrooms had more positive evaluations about their educational experiences than students in passive learning classrooms. Regardless of the approach they used, teachers held similar opinions. Furthermore, when active learning was used in a classroom and a large lecture hall, students' grades and opinions of their educational experience both increased, according to Sinnayah et al. (2019). It has been demonstrated that implementing active learning techniques, such as guided inquiry learning methods for small teams greatly lower this barrier and enhances learner assessment results. In addition to fostering subject-specific knowledge and skills, guided team-based activities can support this strategy by developing more general skills and abilities, such as communication and teamwork, which will improve student assessment results.

Furthermore, Srilertthanikul (2024) who developed the active learning outcomes on the current situation of Europe of the students of Mathayom 2 (Grade 8), students' academic performance was enhanced by active learning strategies, and they generally expressed gratitude for the instructional strategies and educational resources used. These promote critical thinking, problem-solving abilities, and student involvement. Therefore, the results of implementing the integrated active learning model focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand are expected to develop students' analytical thinking, problem-solving, and creativity skills, which is in line with the need to raise PISA scores and build competencies necessary for the future.

Thus, the innovative development of sustainable integrated active learning and contextual appropriateness, particularly for lower secondary students in local schools. Students are encouraged to assess, synthesize, and analyze material through active learning activities. Creative active learning solutions are needed to address problems like time restrictions and group projects. It has become the urgent agenda in line with the needs of 21st-century learners, as well as promoting Thailand's commitment to sustainable development. Real-world scenarios are included in community problem-based learning (CPBL), which improves academic performance and social and emotional skills while training students to be contributing members of society. By building partnerships among teachers, policymakers, and community stakeholders, these innovations have the transformative potential to reduce existing gaps in education quality and access and promote the holistic development of students, as illustrated in the following Figure 1:

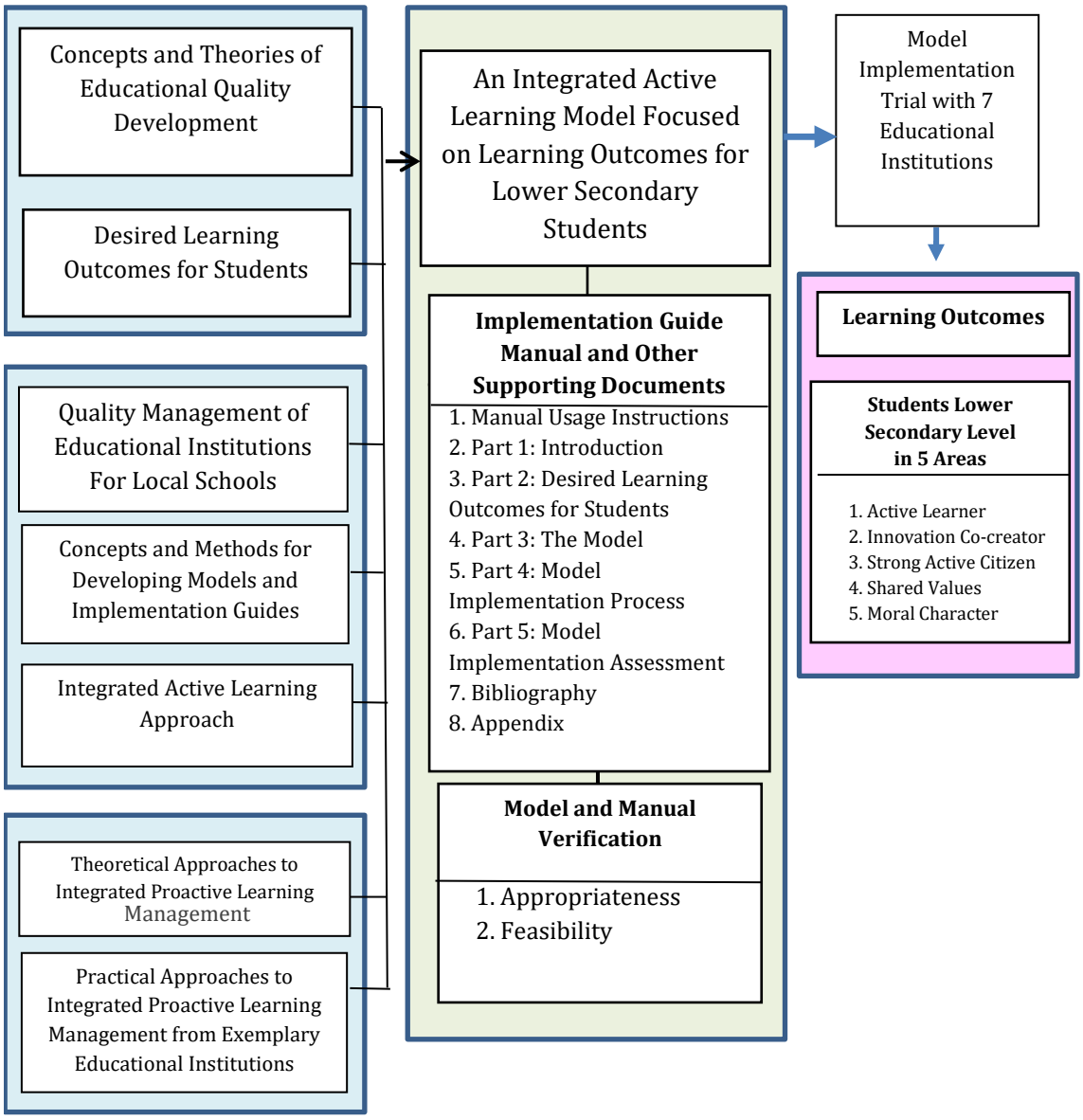

Figure 1: Research conceptual framework

2. METHODS

This research used a multi-phase mixed-methods, divided into 4 phases, the details were presented as follows:

Phase 1: Synthesize and confirm the conceptual framework and indicators for learning outcomes for lower secondary students, divided into 2 steps:

Step 1.1: Synthesizing of the conceptual framework and indicators. The researchers studied at least 20 papers from documents, articles, journals, and related research that are consistent with the 2018 National Education Standards and the secondary education system from Thai and foreign research databases. The instrument used was a synthesis table for collecting and organizing data on the conceptual framework and indicators. Data were collected by synthesizing to be a draft conceptual framework and a set of indicators. The data were analyzed using frequency counting and content analysis to summarize the study results.

Step 1.2: Confirming the conceptual framework and indicators. The key informants were 5 experts who were purposively selected, consisting of local secondary school administrators and educational administration experts. The instruments used were a checklist and focus group discussion agendas. Data collection was conducted through an online focus group discussion. The data were analyzed using the mean and standard deviation to evaluate the validity and appropriateness of the conceptual framework and indicators.

Phase 2: Study guidelines for integrated active learning management focused on learning outcomes for lower secondary students, divided into 2 steps:

Step 2.1: Theoretical study

Data sources include documents and related research concerning the guidelines for integrated active learning management, at least 20 papers. The instruments used were a synthesis table for analyzing and summarizing theoretical approaches. The researchers synthesize good practices in integrated active learning management. The data were analyzed by conducting content analysis to create findings for further practical application.

Step 2.2: Practical integrated active learning management guidelines

The key informants were purposively selected, consisting of 5 teachers from a prototype school under the local administrative organization based on the following criteria: 1) Serve as basic education teachers who have received teaching awards from local administrative organizations at the national level or higher, or teachers from other organizations who teach at the same level; 2) serve as a senior professional level or higher; and 3) serve as teaching not less than 10 years. The instrument used was a semi-structured interview form to collect in-depth information involving successful practices. The researchers conducted the interviews themselves and analyzed the data using content analysis.

Phase 3: Develop and verify an integrated active learning model focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand, divided into 2 steps:

Step 3.1: Draft a model and manual

Key informants were purposively selected, consisting of 7 experts as specialists in integrated active learning content by conducting an online workshop. The instruments used were a workshop agenda and a meeting record form for drafting and improving the model. The researchers organized an online workshop to review and improve the model and manual. Data were analyzed using content analysis to collect suggestions from experts.

Step 3.2: Verify the model and manual

The key informants were 7 experts. The instrument used were a checklist and connoisseurship. The researchers organized an online connoisseurship to verify the feasibility and appropriateness of the model and manual. Data were analyzed using frequency, percentage, mean, and standard deviation.

Phase 4: Evaluate the model implementation of the integrated active learning model focused on learning outcomes for lower secondary students in schools under Local administrative organizations in Chiang Mai province, Thailand.

Step 4.1: Implementation of the model

The key informants were purposively selected, consisting of 7 school directors and 5 teachers from 7 schools, for a total of 42 participants as well as 7 classrooms from the pilot schools that organize active learning activities. The duration of implementing a model is for 1 semester from November 2023 to March 2024. This depends on the school context and the agreement on which grade level (G.7–G.9) and which classroom or learning group. The instruments used for data collection were a manual, lesson plans, learning tools, and evaluation tools. Data were collected by 1) organizing training to prepare teachers, 2) Schools implement the model, 3) Reflect on the implementation results, and 4) Evaluate the implementation results. Data were analyzed using qualitative reflection analysis and recorded results.

Step 4.2: Evaluation of the model implementation results.

The key informants were purposively selected, consisting of 7 schools under local administrative organizations in Chiang Mai province. Each school consisted of one director, 5 teachers, and students who participated in the pilot activity (The same as in step 4.1). The instruments used for data collection were the learning outcomes assessment form, reflection implementation results, and satisfaction survey. Data collection was conducted by evaluating the results from student learning outcomes, teacher feedback from implementation, and the satisfaction level of all participants. Data analysis used descriptive statistics (frequency, percentage, mean, and standard deviation) and content analysis.

3. RESULTS

The results of this research were as follows:

1. Results of the synthesis of the conceptual framework related to the desired outcomes of lower secondary education are as follows:

1.1 The learning outcomes of lower secondary education students consist of 5 main conceptual frameworks, 23 secondary conceptual frameworks with explanations, and 72 indicators.

1.2 The results of the confirmation of the conceptual framework and the learning outcome indicators, etc., they were correct and appropriate overall in all aspects at the highest level, passing the determined criteria at 3.51 and above.

2. Results of the study guidelines for integrated active learning management focused on learning outcomes for lower secondary students, dividing into 2 steps:

2.1 Theoretical integrated active learning management guidelines, there are 7 steps in learning management: 1) goal setting, 2) activity design, 3) learning stimulation, 4) interactive learning, 5) knowledge application, 6) learning outcome reflection, and 7) evaluation step.

In this case, it aims for students to move in various movements, frequently arranged from the highest to the lowest as follows: 1) intellectually active, 2) socially active, 3) appropriately physically active for their age and interests, and 4) emotionally active.

2.2 Practical integrated active learning management guidelines, teachers must use a variety of learning management methods continuously in order to learners are able to:

2.2.1 Access the lessons that they have learned and understand by designing lesson content that emphasizes learning through activities that learners must do by themselves or in groups to have the opportunity to think, practice, and apply knowledge to their full daily lives.

2.2.2 Connect previous knowledge or experiences with new learning through reviewing and creating learning media that can be used for further learning with the hope of understanding and applying it to their daily lives effectively.

2.2.3 Create their own knowledge or create new experiences from learning through planning, practicing, and creating their own work, including participating in extra-classroom activities to create knowledge, understanding, and expertise in many areas.

2.2.4 Learners are stimulated and motivated to learn by teachers organizing learning activities that stimulate and reinforce positively for students, helping to increase relaxation and enjoyment in learning, and motivating students even more.

2.2.5 Develop expertise skills from learning by organizing learning through activities that emphasize higher thinking, integrating knowledge in other activities with additional practice from what they have learned, and being able to create new knowledge or work by themselves effectively.

2.2.6 Receive feedback to improve learning from teachers while observing, asking questions, and providing information to promote learning and organizing activities for students to exchange knowledge with friends. The teacher acts as a consultant and provides additional advice for continuous learning improvement;

2.2.7 Learners receive learning development in an appropriate classroom atmosphere by the teachers providing an appropriate learning environment that is conducive to learning, along with suitable assessment to support effective learning and good results in learner development.

2.2.8 Learners have self-regulated learning and self-directed learning through practical activities, exchanging knowledge, and presenting work with friends in and outside the classroom.

2.3 In addition, the integrated active learning management approach that focuses on learning outcomes, consisting of:

2.3.1 The teachers organize learning according to the objectives, appropriate for the age and development of the learners, consistent with the context, nature, and background of the students, and most beneficial to the learning of the students.

2.3.2 The work or performance reflects the development of basic skills according to the age and characteristics of the learners. Teachers organize learning activities to develop communication skills, reading, speaking, listening, thinking, and writing, emphasizing high-level thinking and presenting work in a systematic way to promote learning and the development of important skills in the daily life of the students.

2.3.3 The work or performance reflects the learning ability according to the age and characteristics of the learners. Teachers organize activities to create flexibility in thinking and linking concepts, promoting creative thinking and systematic thinking, implementing a learning process appropriate for the age and context of each student.

2.3.4 The work or performance reflects the learning ability according to the age and characteristics of the learners, allowing the students to design learning and practice various process skills, including planning, analyzing, experimenting, and solving problems, by providing continuous work from learning in the classroom to create learning experiences.

2.4 Furthermore, the integrated active learning management guidelines focused on learning outcomes for schools under local administrative organizations, consisting of:

2.4.1 Principles and concepts of integrated active learning management guidelines focused on learning outcomes as a policy of the parent organization, school administrators, participation of all parties, needs, and consistency with local contextual conditions.

2.4.2 Integrated active learning management administration focused on learning outcomes has many models, such as using local curriculum, additional curriculum, projects, situations or phenomena, local contextual conditions, and others as a basis for determining themes, determining learning units, learning plans, and measuring and evaluating results.

2.4.3 Integrated active learning management design focused on learning outcomes can be operate as follows: 1) Teachers can design learning management freely, 2) Organize it as a school project to create products or innovations, 3) Create it as a local or additional curriculum according to needs, and 4) Provide it according to the available learning resources in or outside the school or as appropriate.

2.4.4 Examples of integrated active learning management focus on learning outcomes that can be an achievement example of integrated active learning management as follows: 1) products such as leaf patterned cloth, key chains, miniatures, Lanna lanterns, Tung, 2) occupations such as fish farming in cages, 3) tourism services and 4) conditions for success including policy, budget, necessity, and awareness of the importance of integrated active learning management.

3. Results of the developing and verifying an integrated active learning model focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand, divided into 2 steps:

3.1 Construct a model of an integrated active learning focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand, with the following details:

The integrated active learning model focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand, The model is named "IBALO Model" (Integrated-based Active Learning for Outcomes), consisting of 8 components: 1) principles and concept, 2) model objectives, 3) systems and mechanisms, 4) guidelines and activities for integrated outcome-based active learning management, 5) success indicators of the model, 6) success conditions for model implementation, 7) forms and documentation, 8) terminology and supporting explanations, as shown in Figure 2.

3.1.1 Principles and concepts

The integrated active learning focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand based on principles and concepts as follow: Systemic management mechanism (I-P-O-F), quality cycle (PDCAA), interdisciplinarity, diversity and flexibility, participation, strong teams, on database, and information and communication technology (ICT). Develop innovations based on cutting differential students according to the talents and potential of each student, based on school and community context, focused on the desired outcomes of learning, biodiversity and cultural resource base (BCG) to have the desired characteristics of students according to the 2018 national standards and the outcomes specified by the educational institution.

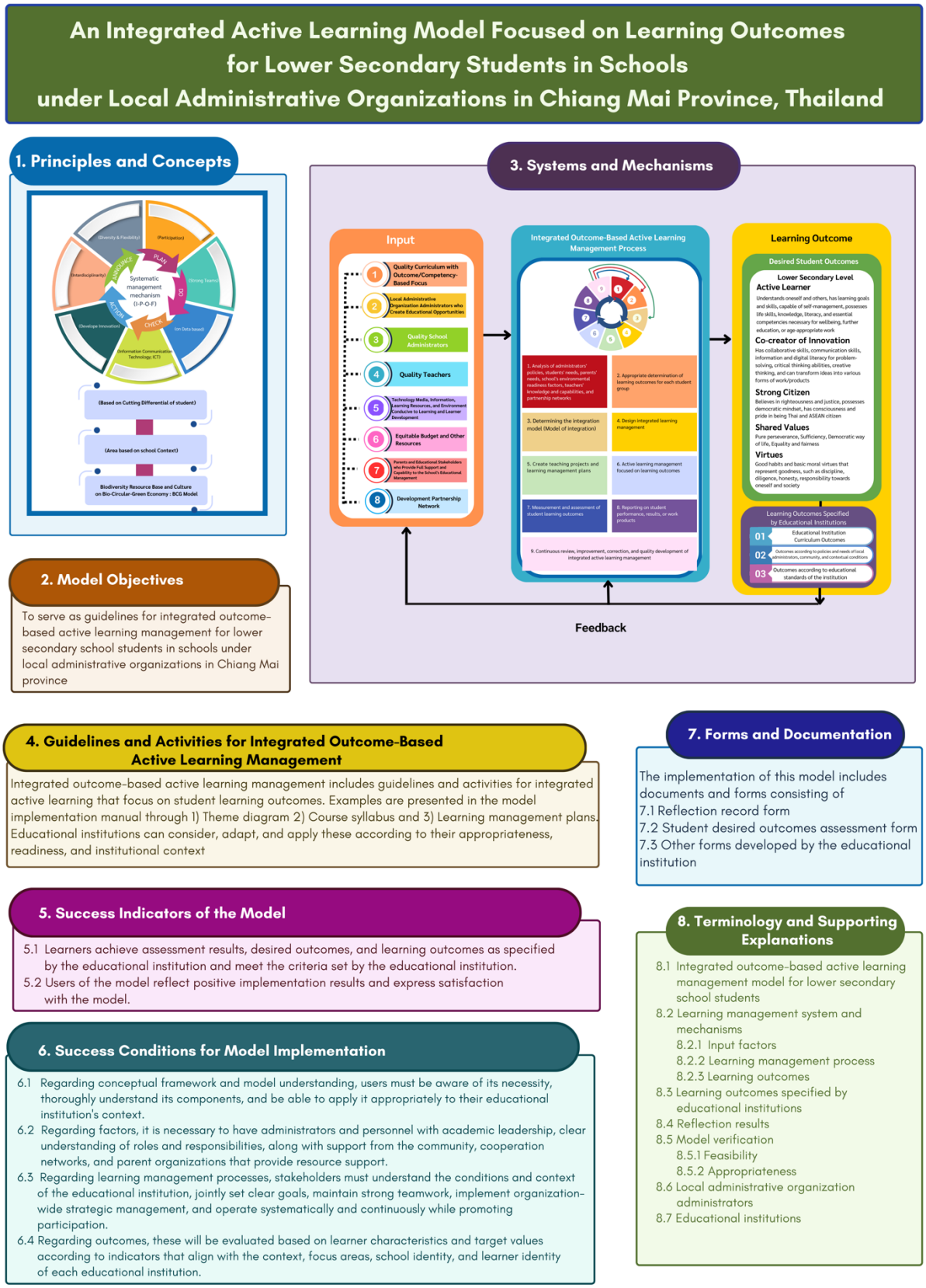

Figure 2: An integrated active learning model focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand

3.1.2 Model objectives

To serve as guidelines for integrated active learning management focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand.

3.1.3 Systems and mechanisms

The system and mechanism of the model are the relationships of various parts in the integrated active learning management focused on learning outcomes for lower secondary school students in local administrative organizations in Chiang Mai province, consisting of 1) Input, 2) Integrated active learning management process focused on learning outcomes, 3) Lower secondary school students' learning outcomes, 4) Feedback. The data connections of relationships used lines to show four parts of the system, each part having lines or arrows or numbers showing the sequence, steps, and mechanisms.

3.1.4 Guidelines and activities for integrated outcome-based active learning management

Integrated outcome-based active learning management includes guidelines and activities for integrated active learning that focus on student learning outcomes. Examples are presented in the model implementation manual through 1) Theme diagram 2) Course syllabus and 3) Learning management plans. Educational institutions can consider, adapt, and apply these according to their appropriateness, readiness, and institutional context.

3.1.5 Success indicators of the model

3.1.5.1 Learners achieve assessment results, desired outcomes, and learning outcomes as specified by the educational institution and meet the criteria set by the educational institution.

3.1.5.2 Users of the model reflect positive implementation results and express satisfaction with the model.

3.1.6 Success conditions for model implementation

3.1.6.1 Regarding conceptual framework and model understanding, users must be aware of its necessity, thoroughly understand its components, and be able to apply it appropriately to their educational institution's context.

3.1.6.2 Regarding factors, it is necessary to have administrators and personnel with academic leadership, a clear understanding of roles and responsibilities, along with support from the community, cooperation networks, and parent organizations that provide resource support.

3.1.6.3 Recording learning management processes, stakeholders must understand the conditions and context of the educational institution, jointly set clear goals, maintain strong teamwork, implement organization wide strategic management, and operate systematically and continuously while promoting participation.

3.1.6.4 Regarding outcomes, these will be evaluated based on learner characteristics and target values according to indicators that align with the context, focus areas, school identity, and learner identity of each educational institution.

3.1.7 Forms and documentation

The implementation of this model includes documents and forms that consist of a reflection record form, a student desired outcomes assessment form, and other forms developed by the educational institution.

3.1.8 Terminology and supporting explanations

3.1.8.1 Integrated outcome-based active learning management model for lower secondary school students.

3.1.8.2 Learning management system and mechanisms consist of input factors, learning management process, and learning outcomes.

3.1.8.3 Learning outcomes specified by educational institutions.

3.1.8.4 Reflection results.

3.1.8.5 Model verification consists of feasibility and appropriateness.

3.1.8.6 Local administrative organization administrators.

3.1.8.7 Educational institutions.

3.2 Construct a manual of an integrated active learning focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand, with the following details:

The manual for implementing the integrated active learning management model focused on learning outcomes for lower secondary school students in schools under local administrative organizations in Chiang Mai province, which has been prepared, consists of 6 components: 1) Instructions for implementing the manual, 2) Introduction, 3) Learning outcomes of learners, 4) Integrated active learning management model focused on learning outcomes for lower secondary school students in schools under local administrative

organizations in Chiang Mai province, 5) Process for implementing the model, and 6) Evaluation of the model implementation.

3.3 Results of the verification of the integrated active learning management model focused on learning outcomes for lower secondary school students in schools under local administrative organizations in Chiang Mai province, as follows:

3.3.1 The verification of the integrated active learning management model focused on learning outcomes for lower secondary school students in schools under local administrative organizations in Chiang Mai province; the appropriateness and feasibility were overall at the highest level. All components passed the specified criteria, as shown in Table 1.

3.3.2 The verification of the manual for implementing the integrated active learning management model focused on learning outcomes for lower secondary school students in schools under local administrative organizations in Chiang Mai province; the appropriateness and feasibility were overall at the highest level. All components passed the specified criteria.

Table 1: Appropriateness and feasibility assessment results of the model and manual

Evaluation	Components	Appropriateness		Feasibility	
		$\bar{X}$	SD	$\bar{X}$	SD
Model	1. Principles and concepts.	4.60	0.48	4.58	0.46
	2. Model objectives.	4.55	0.50	4.52	0.49
	3. Systems and mechanisms.	4.48	0.52	4.50	0.51
	4. Guidelines and activities.	4.52	0.49	4.56	0.48
	5. Success indicators.	4.50	0.51	4.54	0.50
	6. Success conditions.	4.45	0.53	4.58	0.47
	7. Forms and documentation	4.58	0.47	4.56	0.46
	8. Terminology and supporting explanations.	4.54	0.50	4.57	0.48
Overall model mean		**4.52**	**0.51**	**4.55**	**0.48**
Manual	1. Usage instructions.	4.62	0.45	4.56	0.48
	2. Introduction.	4.58	0.47	4.52	0.50
	3. Learning outcomes.	4.55	0.48	4.54	0.49
	4. Model details.	4.60	0.46	4.55	0.48
	5. Implementation process.	4.56	0.48	4.52	0.51
	6. Evaluation process.	4.57	0.48	4.55	0.49
Overall manual mean		**4.58**	**0.47**	**4.54**	**0.50**

4. The implementation results of the integrated active learning management model focused on learning outcomes for lower secondary school students in schools under local administrative organizations in Chiang Mai province, Thailand can be summarized into 3 issues: 1) Reflecting the model implementation results, 2) analysis results of learning outcomes of students, and 3) satisfaction results of evaluating with the implementing the model and the model usage manual, which can be summarized as follows: 4.1 Reflect on the implementation results of the model by users; all 7 schools had outstanding themes that were consistent with the local context, teacher teamwork, and integration of learning content. However, there is still a need to develop the competency measurement of the creation of a clear plan and the continuity of the project. The solutions are to develop an evaluation system, create additional curricula, and have continuous operations. 4.2 Learning outcomes of students can be concluded that students have overall learning outcomes at the highest level in all aspects. When considering the learning outcomes divided into 5 aspects: Active learners, 2) Innovation co-creators, 3) Strong active citizens, 4) Shared values, and 5) Good habits and basic moral characters of being good, responsible for oneself and society, as well as having the ability to live with nature and science sustainably. Moreover, all aspects have learning outcomes before and after studying that were overall at the highest level, but the learning outcomes after studying have higher average scores, as shown in Figure 3.

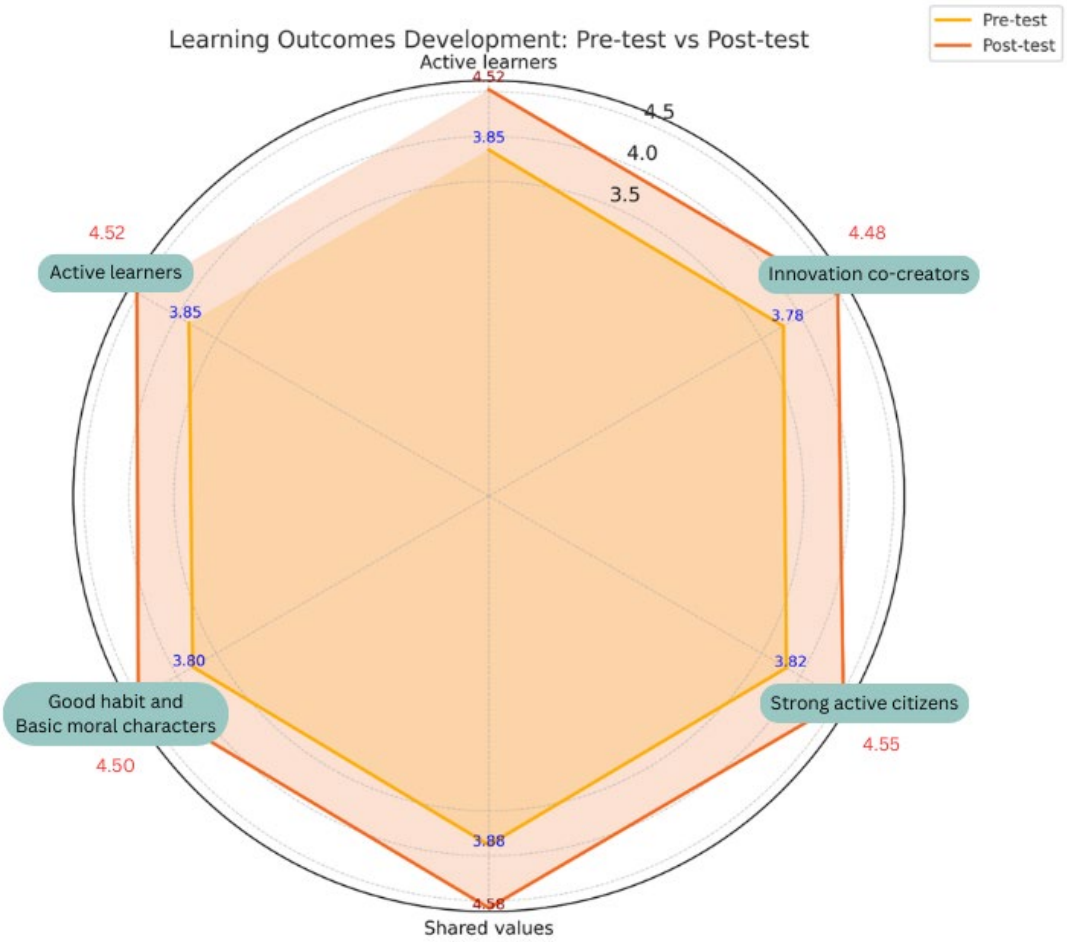

Figure 3: Comparison of student learning outcomes before and after model implementation

4.3 Satisfaction of school administrators and teachers with the model implementation results and manual can be concluded that there is a high level of overall satisfaction, passing the specified criteria. And when considering each of the 4 steps as follows: Step 1: preparation, step 2: implementation, step 3: reporting, and step 4: implementation of evaluation results. Furthermore, every step has a high level of satisfaction, passing the specified criteria as well, as shown in Table 2.

Table 2: Mean, standard deviation, and interpretation of overall satisfaction with the model implementation

Procedures	Satisfaction level (n = 50)		
	$\bar{X}$	SD	Interpretation
Step 1: Preparation	4.34	0.56	High
Step 2: Implementation	4.39	0.53	High
Step 3: Reporting	4.29	0.69	High
Step 4: Implementation of evaluation results	4.34	0.59	High
Total average	**4.33**	**0.49**	**High**

The reflection results on the model implementation revealed that all seven participating schools were very satisfied and realized benefits from implementing the model, especially in terms of the subject content integration, teacher teamwork, and the selection of issues or themes that were relevant to the local context. However, participants also reflected on some limitations, especially the aspects of unclear measurement and assessment of student competencies and the lack of continuity in implementation in some projects.

4. DISCUSSION

This research successfully developed and verified an integrated active learning management model focused on learning outcomes for lower secondary school students in local administrative organizations in Chiang Mai province, Thailand. The findings of this study can be discussed across multiple dimensions that are significant and connected to related research.

Regarding the integrated active learning management guidelines focused on learning outcomes for lower secondary students developed in this research, the approach can be synthesized into 7 steps: goal setting, activity design, learning stimulation, interactive learning, knowledge application, learning outcome reflection, and evaluation. A key characteristic of this approach is allowing learners to engage in intellectual, social, physical, and emotional movement according to their age and interests, alongside teachers designing activities that promote analytical thinking, creativity, and self-learning, which results in effective and sustainable outcomes consistent with 21st-century learning principles and educational concepts. This aligns with Vodovozov et al. (2021), who emphasized that active learning challenges in integrated engineering education require comprehensive approaches that address both cognitive and practical skill development, highlighting the importance of systematic methodology in active learning implementation. These findings align with the research by Worathadasawat et al. (2024), who studied factor analysis of active learning management among secondary school teachers under the Office of the Basic Education Commission and found that the components of active learning management comprise five elements: multi-ability learning arrangements, process arrangements for learning activities, self-learning empowerment, media and technology utilization for self-learning, and assessment to strengthen learners. This consistency also appears in the work of Srisapan et al. (2020), who found that an integrated learning management model for 21st-century learning, based on an open framework approach, consolidates variables such as inputs, processes, outputs, and feedback, incorporating variables like desirable learner characteristics, teacher management, curriculum, media, innovation, and educational quality management.

This research presents the "IBALO Model" (Integrated-based Active Learning for Outcomes), which represents integrated active learning focused on learning outcomes, emphasizing the integration of local contexts to create sustainable outcomes. The components of this model consist of 8 parts: 1) principles and concept, 2) model objectives, 3) systems and mechanisms, 4) guidelines and activities for integrated outcome-based active learning management, 5) success indicators of the model, 6) success conditions for model implementation, 7) forms and documentation, 8) terminology and supporting explanations. The learning process in the IBALO Model has 7 steps: 1) goal setting, 2) activity design, 3) learning stimulation, 4) interactive learning, 5) knowledge application, 6) learning outcome reflection, and 7) evaluation. The development of this model was adapted from design concepts from Stanford d.school, UK Design Council, and IDEO Toolkit (IDEO, 2012), developed and improved through workshops and expert reviews. Model verification results demonstrated high appropriateness and feasibility, covering all eight components, including the manual, which was assessed as consistent with educational quality standards. The emphasis on local context integration aligns with Siswoyo (2023), who demonstrated the successful implementation of an active learning model with integrated digital learning media incorporating Madura local culture, highlighting the importance of contextual relevance in educational approaches. This success aligns with the concept of Bonwell and Eison (1991), who believe that increasing students' participation in the learning process is a crucial strategy for improving teaching efficacy, and that active learning can often be implemented with only slight modifications to existing practices. Furthermore, this aligns with the study by Kotchasit et al. (2019), who examined educational systems in eight countries including Singapore, Japan, Finland, Canada, Australia, Germany, Portugal, and Mexico, finding clear policies for raising student quality, promoting national education standards in curriculum, teaching, learning, and evaluation, having robust follow-up systems, and excellent teacher development systems.

The IBALO Model also connects with Thailand's educational development guidelines, such as the PDCA quality management cycle and guidelines for implementing national education standards using planning systems, administration, and teacher potential development to create sustainable learning quality. This connection aligns with the work of Duangmanee and Waluyo (2023), who indicated that active learning involving discussion and role-playing has transformed pedagogy from lecture-based to dynamic activities, although concerns remain about a lack of innovative techniques and student-teacher issues. Additionally, this model is consistent with research in many countries such as the United States, England, and Singapore, which emphasize key success factors such as support from administrators, teacher development, community connections, and the use of technology in learning.

The results of implementing the model in schools under local administrative organizations in Chiang Mai province revealed significant strengths including the selection of themes consistent with local contexts,

teacher teamwork, and integration of learning content. However, areas for development remain in terms of competency measurement, clarity of implementation plans, and project continuity. These findings align with Salam et al.'s (2020) conclusion that teachers should use integrative learning models to enhance students' understanding of mathematical concepts and critical thinking skills, as this model can be applied to various subjects related to conceptual understanding and can be combined with other models to improve learning outcomes. Moreover, the findings reflect the recommendations of Matinho et al. (2022), who pointed out that integrated learning in health professions involves linking concepts from related fields, engaging in higher-order thinking, and applying them to real problems, while emphasizing the need for conceptual clarity and connection to relevant theoretical frameworks.

The results of implementing the model revealed significant strengths, including the selection of themes consistent with local contexts, teacher teamwork, and integration of learning content. However, areas for development remain in terms of competency measurement, clarity of implementation plans, and project continuity. The integration of local contexts and project-based approaches aligns with Yulkifli et al. (2022), who developed a physics e-module based on an integrated project-based learning model with an Ethno-STEM approach for senior high school students, demonstrating the effectiveness of combining local cultural elements with modern educational methodologies. These findings align with Salam et al.'s (2020) conclusion that teachers should use integrative learning models to enhance students' understanding of mathematical concepts and critical thinking skills, as this model can be applied to various subjects related to conceptual understanding and can be combined with other models to improve learning outcomes. Moreover, the findings reflect the recommendations of Matinho et al. (2022), who pointed out that integrated learning in health professions involves linking concepts from related fields, engaging in higher-order thinking, and applying them to real problems, while emphasizing the need for conceptual clarity and connection to relevant theoretical frameworks.

The recommendations from this research emphasize developing teachers' skills in designing learning appropriate for local contexts through training and creating networks of cooperation between schools, as well as creating curricula that are flexible and appropriate for students' needs. The emphasis on cooperative networks aligns with Dato et al. (2021), who demonstrated that local active learning strategies can be effectively enhanced through cooperative multi-agent systems, highlighting the importance of collaborative approaches in educational contexts. These recommendations align with the study by Jaroenpool et al. (2023), who concluded that all stakeholders involved in the learning process should collaborate to create learning exercises that address students' challenges and needs, while considering factors related to research advisors and school programs, including school policies regarding educational quality.

However, after a model implementation result, the satisfaction of various stakeholders such as students, parents, the community, and relevant agencies demonstrated that the integrated active learning model focused on learning outcomes met their expectations and needs. However, integrated active learning management must be carefully planned and prepared before the semester begins, as it involves budgeting and requires approval from local administrators, parents, the community, and all relevant parties. The findings of this study demonstrate that the IBALO Model has potential to serve as a prototype for educational development at the lower secondary level, particularly in the context of schools under local administrative organizations and can be expanded to other areas in the future.

5. LIMITATIONS AND FUTURE RESEARCH

5.1 Recommendation for application of research findings

The local administrative organizations should provide workshops to train teachers on the integrated active learning model focusing on how to implement it effectively in classrooms to enhance learning outcomes among lower secondary students, integrate the active learning model into the existing curriculum, and offer ongoing professional development opportunities for teachers to refine their skills in implementing the active learning model. This could include additional training sessions, peer observations and feedback, and establishing a system for monitoring and evaluating the implementation of the active learning model.

5.2 Recommendations for further research

Future research on the integrated active learning model focused on learning outcomes for lower secondary students in schools under local administrative organizations in Chiang Mai province, Thailand, there should be an investigation of the sustained effects of the model on student learning outcomes and overall academic achievement, examine how teachers adapt to the model and identify barriers to effective implementation, and assess how active learning influences student motivation, critical thinking, and problem-solving skills.

5.3 Limitations of research

The specific context of schools under local administrative organizations (LAOs) in Chiang Mai province limits the generalizability of the findings to other types of schools across Thailand due to their unique administrative structures, resource availability, and community backgrounds. Additionally, the study involved a relatively small sample only seven schools, including seven administrators and 42 teachers thus potentially not reflecting the full diversity of LAO schools nationwide. Data collection primarily relied on online methods such as meetings, training sessions, and focus group discussions, which may have restricted the depth of information gathered and presented logistical challenges in coordinating participation. Furthermore, the evaluation was conducted within a single academic semester, thereby limiting the ability to assess long-term impacts or sustainable behavioral changes resulting from the model's implementation.

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REFERENCES

Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. ASHE-ERIC Higher Education Reports.

Dato, B., Gleizes, M. P., & Migeon, F. (2021, February 4–6). A local active learning strategy by cooperative multi-agent systems. In A. P. Rocha, L. Steels, & J. van den Herik (Eds.), *13th International Conference on Agents and Artificial Intelligence (ICAART 2021)* (pp. 406–413). SCITEPRESS – Science and Technology Publications, Lda.

Duangmanee, K., & Waluyo, B. (2023). Active learning and professional development: A case of Thai Chinese teachers. *Social Sciences, 12*(1), Article 38. https://doi.org/10.3390/socsci12010038

IDEO. (2012). *Design thinking for educators toolkit (Version 2.0)*. IDEO LLC.

Jaroenpool, J., Suwanbamrung, C., Sukkaew, N., & Dadras, M. (2023). Students' reflections on an integrated research subject using a research-based learning online model during the COVID-19 pandemic: A qualitative study in Thailand. *Humanities, Arts and Social Sciences Studies, 23*(3), 695–707. https://so02.tci-thaijo.org/index.php/hasss/article/view/261231

Kongrat, C. (2024). Active learning: Discourse in education for student development. *Journal of Education Studies, 52*(1), Article EDUCU5201002. https://doi.org/10.14456/educu.2024.2 [in Thai]

Kotchasit, S., Sereerat, B., Arunwong, R., Pichayakul, T., Nilnopkoon, P., Phanthalert, C., Panomwan Na Ayuthaya, S., Borirasontikul, K., Panyatip, D., & Chitrangsan, N. (2019). Ways of leading the national education standard to practice. *Journal of Graduate Studies Valaya Alongkorn Rajabhat University, 13*(3), 192–203. https://so02.tci-thaijo.org/index.php/JournalGradVRU/article/view/230194 [in Thai]

Local Administrative Organization in Chiang Mai Province. (2022, March). *Educational development plan 2023-2027 for local administrative organizations in Chiang Mai province*. http://edu.chiangmaipao.go.th [in Thai]

Matinho, D., Pietrandrea, M., Echeverria, C., Helderman, R., Masters, M., Regan, D., Shu, S., Moreno, R., & McHugh, D. (2022). A systematic review of integrated learning definitions, frameworks, and practices in recent health professions education literature. *Education Sciences, 12*(3), Article 165. https://doi.org/10.3390/educsci12030165

OECD. (2022). *Programme for International Student Assessment (PISA)*. https://www.oecd.org/en/publications/pisa-results-2022-volume-iii-factsheets_041a90f1-en/thailand_ff214311-en.html

Office of the Education Council. (2018). *National education standards B.E. 2561 (2018).* Office of the Education Council. https://backoffice.onec.go.th/uploads/Book/1659-file.pdf

Office of the National Economic and Social Development Council. (2022). *The 13th national economic and social development plan (2023–2027)*. https://www.nesdc.go.th/main.php?filename=plan13 [in Thai]

Orhan, T. Y., & Sahin, N. (2018). The impact of innovative teaching approaches on biotechnology knowledge and laboratory experiences of science teachers. *Education Sciences, 8*(4), Article 213. https://doi.org/10.3390/educsci8040213

Salam, M., Jafar, & Prajono, R. (2020). Effectiveness of integrative learning models in improving understanding of mathematical concept. *Journal for the Education of Gifted Young Scientists, 8*(3), 1005–1014. https://doi.org/10.17478/jegys.666875

Sinnayah, P., Rathner, J. A., Loton, D., Klein, R., & Hartley, P. (2019). A combination of active learning strategies improves student academic outcomes in first-year paramedic bioscience. *Advances in Physiology Education, 43*, 233–240. https://doi.org/10.1152/advan.00199.2018

Siswoyo, A. A. (2023). Implementation of active learning model with integrated digital learning media of Madura local culture. *Widyagogik: Jurnal Pendidikan dan Pembelajaran Sekolah Dasar, 10*(2a), 520–530. https://journal.trunojoyo.ac.id/widyagogik/article/view/21684

Srilertthanikul, R. (2024). Development of active learning outcomes on current situation of Europe of students of secondary 2 at Watraikhingwitthaya school Samphran district Nakhonpathom province. *Journal of MCU Buddhasothorn Review, 4*(2), 118–132. https://so02.tci-thaijo.org/index.php/JMBR_sothorn/article/view/275672/183681 [in Thai]

Srisapan, M., Puthaprasert, C., Yaboonthong, Y., & Rupavijetra, P. (2020). The model of integrated learning management to develop learning in the 21st century for students of northeast sports school. *Interdisciplinary Research Review, 15*(5), 46–54. https://ph02.tci-thaijo.org/index.php/jtir/article/view/240591

Teachers' council of Thailand regulations on professional licenses (No. 2) 2564 B.E. (2022, April 21). *Royal Thai Government Gazette*. No. 139 Special section 233 D. pp. 57–58. [in Thai]

United Nations. (n.d.). *4 Quality education*. Sustainable Development Goals. https://www.un.org/sustainabledevelopment/education/

Vodovozov, V., Raud, Z., & Petlenkov, E. (2021). Challenges of active learning in a view of integrated engineering education. *Education Sciences, 11*(2), Article 43. https://doi.org/10.3390/educsci11020043

Worathadasawat, W., Chaowachai, S., & Kornpuang, A. (2024). Factor analysis of active learning management of secondary school teachers under the office of the basic education commission. *Journal of Education and Innovation, 26*(4), 302–311. https://so06.tci-thaijo.org/index.php/edujournal_nu/article/view/266211 [in Thai]

Yulkifli, Y., Yohandri, Y., & Azis, H. (2022). Development of physics e-module based on integrated project-based learning model with Ethno-STEM approach on smartphones for senior high school students. *Momentum: Physics Education Journal, 6*(1), 93–103. https://doi.org/10.21067/mpej.v6i1.6316