Needs Assessment for Developing Student Teachers' Competencies in Sufficiency Economy Philosophy Implementation in Thailand

Saiphin SIHARAK
Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, Thailand
saiphin_s@rmutt.ac.th, ORCID:0009-0008-3207-123X

Watcharaporn KHUANWANG *(Corresponding author)
Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, Thailand.
watcharaporn_k@rmutt.ac.th ORCID: 0009-0009-3144-4716

Sukanya BOONSRI
Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, Thailand
sukanya_bo@rmutt.ac.th, ORCID: 000-0001-7768-5827

Nattaka SANGUANWONG
Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, Thailand
nattaka_s@rmutt.ac.th, ORCID: 0009-0002-0214-7981

Withawat PENPHU
Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, Thailand
withawat_p@rmutt.ac.th, ORCID: 0000-0003-1516-1571

Sermsak SRASRI
Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Pathum Thani, Thailand
sermsak_s@mail.rmutt.ac.th

Prapassorn SIHARAK
Faculty of Liberal Arts, Thammasat University, Thailand
prapassorn.sih@dome.tu.ac.th

ABSTRACT
Thailand's educational policy emphasizes integrating Sufficiency Economy Philosophy into education management systems at all levels, including teacher preparation programs that develop educators capable of serving as role models for sustainable living. This research aimed to: 1) assess the needs for developing and promoting student teachers' application of Sufficiency Economy Philosophy, and 2) propose guidelines for cultivating sufficiency characteristics and integrating Sufficiency Economy Philosophy into teacher education curriculum and training processes. The research employed a cross-sectional survey design with 180 student teachers from teacher education institutions in Thailand. Data were collected using a validated and reliable questionnaire developed from the Sufficiency Economy Philosophy conceptual framework, covering nine dimensions of competency. Data analysis utilized descriptive statistics (means and standard deviations) and the Modified Priority Needs Index ($PNI_{Modified}$) to identify developmental priorities. Results revealed that current Sufficiency Economy Philosophy implementation levels ranged from moderate to high (mean scores 3.36-3.59), while desired competency levels ranged from high to highest (means 4.39-4.60), indicating significant developmental gaps. Priority developmental needs identified through $PNI_{Modified}$ analysis included: 1) risk prediction and readiness for change (good built-in immunity) ($PNI_{Modified}$ = 0.32), particularly developing the ability to cope with potential future negative consequences ($PNI_{Modified}$ = 0.35) and knowing what actions to take to prevent problems or resolve issues that may arise ($PNI_{Modified}$ = 0.33); 2) evaluation and improvement of practical thinking (performance and work evaluation) ($PNI_{Modified}$ = 0.30), especially identifying problems related to lack of virtues and determining strategies for improvement ($PNI_{Modified}$ = 0.33); and 3) reflective thinking and learning summary (learning summary) ($PNI_{Modified}$ = 0.27), including extracting lessons related to balance across four dimensions ($PNI_{Modified}$ = 0.32). The findings reveal significant competency gaps requiring systematic curriculum development. Guidelines recommend integrating self-immunity skills through experiential learning approaches, with priority given to developing risk management capabilities, reflective assessment skills, and ethical reasoning competencies.
Keywords: Curriculum development, Needs assessment, Teacher competency, Sufficiency Economy Philosophy

INTRODUCTION
Sufficiency Economy Philosophy is a concept gifted by His Majesty King Bhumibol Adulyadej the Great (King

Rama IX) to the Thai people as a foundation for living and developing the country toward sustainability. It aims to foster societal self-reliance while maintaining stability and balance amid globalization changes (Chaipattana Foundation, 2020). This philosophy has been incorporated into Thailand's National Economic and Social Development Plan since the 9th edition (2002–2006) and continues to serve as a guiding framework through the current 13th Plan (2023–2027), which adopts Sufficiency Economy Philosophy principles to guide Thailand's development and management based on the Middle Way approach (Office of the National Economic and Social Development Council, 2023).

The philosophy emphasizes three main principles: reasonableness, moderation, and self-immunity, grounded in the fundamental conditions of knowledge and virtue. Implementation must consider both national and international contexts, including the potential of various forms of capital such as economic, social, and environmental resources. Additionally, the philosophy emphasizes creating balance across multiple dimensions, particularly between developing competitive capabilities for international markets and maintaining sustainable self-reliance capacity (Office of the National Economic and Social Development Council, 2023).

Sufficiency Economy Philosophy has been integrated into national education management policies and strategies to develop Thai citizens with characteristics aligned with the philosophy (Office of the Education Council Secretariat, 2017). This integration aligns with the United Nations Sustainable Development Goals (SDGs), which aim to promote quality educational opportunities in an equitable and inclusive manner (United Nations, 2015). The philosophy represents an approach applicable at all levels and in various contexts, from national to organizational administration, and is internationally recognized as a sustainable development approach (von Feigenblatt, Cooper, & Pardo, 2022)

Educational institutions across Thailand have been encouraged to apply Sufficiency Economy Philosophy, with notable success achieved in implementation. According to the Ministry of Education's announcement for the 2022 academic year, several Thai educational institutions have been recognized as exemplary in organizing learning and management activities according to Sufficiency Economy Philosophy (Sufficiency Educational Institutions). The certification statistics include: 287 schools out of 29,251 under the Office of the Basic Education Commission, 5 out of 433 schools under the Vocational Education Commission, 31 out of 3,968 schools under the Private Education Commission, 71 out of 1,407 schools under the Department of Local Administration, 9 out of 437 schools under the Bangkok Metropolitan Administration Office of Education, 10 out of 12 Border Patrol Police schools, and 415 out of 454 institutions under the Office of the Permanent Secretary of the Ministry of Higher Education, Science, Research and Innovation (Office of the Basic Education Commission, 2022).

Research findings indicate that learners who have been cultivated with Sufficiency Economy Philosophy demonstrate moderate behavioral improvements, develop reasoned approaches to living, and exhibit enhanced self-immunity. Additionally, these learners demonstrate increased sharing and mutual assistance behaviors, as well as living practices grounded in knowledge and virtue (Dharmapiya & Saratun, 2016, 2020).

Teachers play a crucial role in driving educational management to improve learner quality. Therefore, teachers need to be grounded in fundamental concepts based on Sufficiency Economy Philosophy from their student years, enabling them to apply these principles in both their personal lives and future teaching careers. Consequently, educational institutions have the vital responsibility of organizing teaching, learning, and activities that cultivate morality, ethics, and the practical application of Sufficiency Economy Philosophy (Office of the Education Council Secretariat, 2017).

A study examining student teachers' application of Sufficiency Economy Philosophy represents a crucial factor in expanding implementation results to students across educational institutions. Therefore, the researcher is interested in investigating this issue with two objectives: 1) to assess the needs for developing and promoting student teachers' application of Sufficiency Economy Philosophy, and 2) to propose guidelines for cultivating sufficiency characteristics and integrating Sufficiency Economy Philosophy into teacher education curriculum and training processes.

The results of this study will benefit stakeholders by providing guidance for curriculum development, teaching and learning activities, and creating environments conducive to promoting and cultivating Sufficiency Economy Philosophy characteristics among student teachers. This will contribute to producing quality teachers who are prepared to transmit these valuable concepts to the nation's youth in the future.

LITERATURE REVIEW

Sufficiency Economy Philosophy

His Majesty King Bhumibol Adulyadej the Great first bestowed the philosophy of Sufficiency Economy upon the Thai people more than 50 years ago. In his royal speech to graduates at the Royal Degree Conferment Ceremony at Kasetsart University on July 18, 1974, His Majesty stated, the development of the country must follow a step-by-step process. We must build the foundation of self-sufficiency. Most of the people's basic needs must be met first. When the foundation is stable, moderately adequate, and practical, then we can gradually build upon it to enhance prosperity and achieve higher economic status in the next phase. If the aim is to create rapid economic growth without making the action plan correspond to the conditions of the country and its people accordingly, there will be imbalance in various matters. This can eventually lead to the frustration of failure, as can be seen in many developed countries experiencing severe economic problems at this time.

When the concept of Sufficiency Economy became widely adopted, various interpretations and practices emerged, some of which deviated from the original principles. For this reason, at the end of 1999, His Majesty the King expressed the royal intention to clarify the concept through an article entitled "The Philosophy of Sufficiency Economy." This document resulted from collecting and examining His Majesty's statements on this matter, with experts from various fields, including economics and other sciences, invited by the Office of the National Economic and Social Development Board to provide clear guidelines for implementation by relevant agencies and the general public. The philosophy defines Sufficiency Economy as "a philosophy that guides the existence and conduct of people at all levels, from the family and community levels to the state level, in both development and administration of the country to proceed on the Middle Way, especially economic development to keep pace with the era of globalization. It requires substantial knowledge, prudence, and caution in applying various disciplines in planning and implementing all stages, especially for government officials, academics, and businesspeople at all levels, to possess morality, honesty, and appropriate knowledge while living with patience, in order to be balanced and ready to respond to rapid and extensive changes in material, social, environmental, and cultural aspects from the external world" (Chaipattana Foundation, 2020).

Based on a review of relevant documents and research, Sufficiency Economy Philosophy has been applied in Thailand's educational development for an extended period. It has been incorporated into the National Economic and Social Development Plan since the 9th edition, and this concept has been integrated into national education policy and management frameworks at all educational levels, focusing on developing learners with desirable characteristics aligned with Sufficiency Economy Philosophy principles (Office of the Education Council Secretariat, 2017).

In 2011, the Ministry of Education and related agencies jointly promoted the development of "Sufficiency Educational Institutions" through concrete measures including curriculum development, teaching materials creation, and supplementary activities aligned with Sufficiency Economy Philosophy. Research findings indicate that educational institutions certified as "Sufficiency Educational Institutions" can encourage learners to develop positive characteristics according to Sufficiency Economy Philosophy guidelines, specifically demonstrating moderation, reasonableness, and good built-in immunity. These institutions also help develop teachers' potential to effectively manage teaching and learning that integrates Sufficiency Economy Philosophy. A critical success factor for becoming a sufficiency school is the collaboration among management, teachers, students, parents, and the community in applying Sufficiency Economy Philosophy to achieve concrete results through the QPAR (Question-Plan-Action-Reflection) process to drive various activities (Dharmapiya & Saratun, 2016).

The Ministry of Education and education-related agencies are promoting the cultivation of Sufficiency Economy Philosophy among the younger generation through learning processes in educational institutions, aiming to develop students who demonstrate moderation, reasonableness, and good immunity while being able to live balanced lives and remain prepared for change (Ministry of Education, 2017). Although some students possess theoretical knowledge and understanding of Sufficiency Economy Philosophy, they still lack the practical skills to apply it in daily life (Thumchuea et al., 2023). Therefore, student teachers, who will transmit this concept to the next generation of young people, must be cultivated to embody sufficiency principles and serve as role models for their future students.

Research on the application of Sufficiency Economy Philosophy among student teachers remains quite limited. The student teacher population is considered a crucial mechanism for producing and developing a new generation of teachers with characteristics aligned with Sufficiency Economy Philosophy principles and grounded in morality and ethics (Phoyen, 2015). Based on a synthesis of research examining learning management grounded in Sufficiency Economy Philosophy within educational institutions, the main approaches to implementing this concept include: integrating Sufficiency Economy Philosophy principles into teaching and learning management processes, providing atmospheres and environments conducive to learning according to Sufficiency Economy Philosophy, and encouraging learners to apply Sufficiency Economy Philosophy in their daily lives (Thumchuea

et al., 2023).

In conclusion, the literature review demonstrates that applying Sufficiency Economy Philosophy in the education system represents an important approach to improving educational quality and learner outcomes in alignment with both Thai and global societal contexts. However, there remains a lack of in-depth research on Sufficiency Economy Philosophy application among student teachers, who constitute a crucial mechanism for transferring these concepts to educational practice in the future. Therefore, the research team is interested in studying student teachers' needs regarding the application of Sufficiency Economy Philosophy in real life, with the aim of obtaining guidelines for cultivating sufficiency characteristics and promoting Sufficiency Economy Philosophy application in Thailand's teacher education curriculum and training processes. This approach seeks to create a new generation of teachers who embody sufficiency as a way of life and can serve as concrete role models for their students.

Needs Assessment

Needs assessment is an evaluation process designed to determine the difference between current conditions and desired conditions by identifying what needs to occur and evaluating what actually happens compared to what should happen. The process then analyzes and evaluates the gap between actual results and required changes (Wongwanich, 2019).

Priority setting represents the final step in identifying essential needs, completing the needs assessment process so that results can be used to analyze causes and develop solutions. Therefore, needs prioritization involves analyzing each identified need and ranking needs from highest to lowest importance. This research employs the Discrepancy Assessment Principle, rooted in needs assessment methodology that utilizes the Discrepancy Model, which collects dual response data using scales that measure importance levels (I = Importance) representing "what should be" values, and achievement levels (D = Degree of Success) representing current conditions or "what is" values.

This study utilizes the Modified Priority Needs Index ($PNI_{Modified}$) method, an improvement over the standard Priority Needs Index (PNI) approach. The method calculates the difference (I - D) and divides it by the D value to control the magnitude of needs within a manageable range while providing comparative meaning. This approach uses current status levels as the foundation for calculating development rates toward the group's expected conditions (Wongwanich, 2019).

$$PNI_{Modified} = (I - D) / D$$

Research on needs assessment is summarized as follows:

Needs Assessment for Improving School Administration Based on Sufficiency Economy Philosophy. This study examined current and expected conditions and assessed developmental needs for school administration according to Sufficiency Economy Philosophy. Results showed that both actual and expected conditions were at high levels, with the highest means in policy management, human resource management, and academic management, respectively. The priority developmental needs were academic administration, general administration, and policy management, respectively (Suwattee et al., 2022).

A Study of Essential Needs in Developing Learning Achievement in Education Philosophy and Sufficiency Economy Courses. The study utilized questionnaires and employed descriptive statistics including frequency, percentage, mean, and standard deviation for data analysis. Results revealed statistically significant differences between actual and expected conditions for improving learning achievement at the .05 level. Teachers' actual conditions exceeded expected conditions, with course content identified as the highest priority need (Tanyabut et al., 2022).

Current Status, Needs, and Guidelines for School Administration According to Sufficiency Economy Philosophy. This research examined current conditions, desirable conditions, essential needs, and guidelines for educational institution management according to Sufficiency Economy Philosophy. The study employed questionnaires analyzed using descriptive statistics (frequency, percentage, mean, standard deviation), Modified Priority Needs Index ($PNI_{Modified}$), and content analysis. Results indicated that current school administration conditions according to Sufficiency Economy Philosophy were generally at moderate levels, while overall desirable conditions were at high levels (Teongchon & Prasertphorn, 2023).

Teacher Leadership Development Needs in Instructional Management Based on Sufficiency Economy Philosophy Principles. This study examined developmental needs for teacher leadership in learning management according to Sufficiency Economy Philosophy. Data were collected through questionnaires and analyzed using descriptive statistics and Modified Priority Needs Index ($PNI_{Modified}$). Results showed that teacher leadership in learning

management according to Sufficiency Economy Philosophy was at moderate levels in actual conditions but should be at the highest level. Priority needs ranking revealed: learning management according to Sufficiency Economy Philosophy, curriculum development according to Sufficiency Economy Philosophy, self-development and peer teacher development, serving as a model of sufficiency, and being a change-leading teacher, respectively (Lunawong, 2022).

Based on related needs assessment research, this methodology represents a corrective study approach that helps identify authentic problems, enabling targeted solutions according to stakeholder and organizational needs. Therefore, needs assessment proves highly valuable in creating directional, feasible planning likely to achieve desired outcomes. Additionally, it serves as a foundation for comparing operational success, allowing evaluators to plan appropriate actions. This technique facilitates efficient resource utilization in operations that are cost-effective and verifiable (Wongwanich, 2019).

Teacher Competency

Competencies represent the ability, potential, and expertise to complete work effectively by integrating knowledge, abilities, skills, attitudes, habits, motivations, inspiration, and autonomy into practical potential applicable to new and complex situations. The goal of developing Thai people focuses on creating competent individuals who become capable persons with expertise in managing their own lives, performing quality work, producing innovative outcomes, and achieving well-being in a Society 4.0 era or changing society. Teacher competencies should encompass three groups comprising 8 competencies (8 C). Group 1: Curriculum Development includes C1 Curriculum Construction Competencies for developing and creating curricula. Group 2: Proactive Collaborative Learning Management encompasses C2 Child-oriented Instructional Competencies, C3 Classroom Innovation Implementation Competencies, C4 Classroom Learning Assessment Competencies, C5 Classroom Action Research Competencies, C6 Classroom Management Competencies, and C7 Character/Attribute Development Competencies. Group 3: Proactive Supervision consists of C8 Proactive Supervision Competencies, which include academic and non-academic self-improvement encompassing teacher morality and ethics, and continuous professional development through proactive supervision. Mentoring through Professional Learning Communities (PLC) represents an intensive, focused teacher development approach that works from the inside-out rather than through directive instruction (Dechakup & Yindisuk, 2017).

Teachers must possess digital and technological skills and demonstrate proficiency in integrating information technology into teaching and learning management, which constitutes a fundamental competency for contemporary educators who need to use digital tools effectively to maintain student engagement and interact with students in real-time. The TPACK framework provides a structure for integrating teaching and learning that combines technological, pedagogical, and content knowledge (Kiryakova & Kozhuharova, 2024; Kulikova, 2024; Napitupulu et al., 2024; Zhang & Wu, 2025).

Teachers must also demonstrate instructional management capabilities and professional teaching competencies. Educators need to possess core teaching skills including lesson plan design, assessment development and implementation, mastery of subject-specific content for which they are responsible, and teaching strategies that achieve instructional objectives. The fundamental principle of teachers' professional competence involves understanding curriculum requirements and possessing the ability to adapt teaching methods to meet diverse learner needs (Abdi & Nkomo, 2023).

Pre-service preparation and in-service training enhance teaching expertise and develop teachers' soft skills and attributes such as empathy, communication, leadership, emotional intelligence, and motivation. Acquiring these soft skills is crucial for improving teacher performance and student engagement. These personal attributes help ensure positive teacher-student interactions and contribute to creating positive learning environments (Karacaoğlu, 2024; Malynovska & Barantsova, 2024; Sydorenko et al., 2022).

Teachers' competencies directly influence student development outcomes. Therefore, providing teacher training to develop competencies that increase student learning outcomes in accordance with curriculum standards is essential (Cahyanti et al., 2024; Nadeem et al., 2025).

METHODOLOGY

Population and sample

The population is 287 students enrolled in the Learning Management Innovation Development Course Semester 1 of the 2023 academic year.

The sample group is 180 students enrolled in the Learning Management Innovation Development Course Semester

1 of the 2023 academic year of University in Thailand. The sample was obtained by simple random sampling, which is greater than the minimum sample size calculated by Yamane's (1973) formula at a confidence level of 95%.

Research Instrument:

The instrument used in this research is a questionnaire on students' behavior and opinions about the Sufficiency Economy Philosophy, both the actual and the supposed conditions. The questionnaire is a 5-level rating scale with 56 questions.

Research Instrument development

The instruments used in this research were developed based on the decoding of Sufficiency Economy Philosophy for teaching the thought process as proposed by Khammani (2015). The development process included the following steps.

1) Review of concepts, theories, and research related to Sufficiency Economy Philosophy and the decoding of Sufficiency Economy Philosophy for teaching the thought process as outlined by Khammani (2015).
2) Analyze and synthesize nine core questions based on the decoding of Sufficiency Economy Philosophy for teaching the thought process. These questions include:
(1) What do you intend to do, for what purpose, and why? (Establishing objectives)
(2) How knowledgeable are you about what you intend to do? (Considering knowledge conditions)
(3) Are you ready, or is it feasible to successfully accomplish what you are considering? (Examining factors and balance across four dimensions)
(4) What tasks need to be done and how will they be accomplished? (Developing a plan using Sufficiency Economy Philosophy principles)
(5) Are the tasks you intend to undertake appropriate and moderate for yourself? (Formulating a plan using the moderation principle)
(6) How can you develop good self-immunity to be prepared for potential impacts and changes? (Good built-in immunity)
(7) How should you implement the plan to achieve success? (Implementation of the plan)
(8) Has the work been completed successfully? How effective were the results? How can the work progress further? (Performance and work evaluation)
(9) What have you learned and how will you apply these insights in the future? ((learning summary)
3) Develop a questionnaire based on these nine core questions, incorporating sub-questions for each main question to obtain comprehensive and in-depth data.
4) Establish content validity of the questionnaire through evaluation by three experts. The consistency between questions and objectives was assessed using the Index of Item-Objective Congruence (IOC), with values ranging from 0.67 to 1.00.
5) Refine the questionnaire following quality assessment for content accuracy, then pilot test it with a student group similar to the actual sample using Cronbach's alpha coefficient. The reliability values for the current state and expected state were 0.95 and 0.99, respectively.

Data Collection

1)The researcher visited the participants at the designated time and clarified the research objectives and anticipated benefits of the study. The researcher explained how to complete the questionnaire and provided participants with the opportunity to ask questions if clarification was needed.
2)The researcher distributed the questionnaire to participants and remained available while questionnaires were being completed to check for completeness upon return. Once all questionnaires were fully completed and returned, data collection proceeded to the next phase.
3)The researcher compiled all questionnaires and entered the data into Excel software. The collected data were then analyzed statistically using specialized statistical software.

Data Analysis

1)Analyze the behavior and opinions on the Sufficiency Economy Philosophy using the mean and standard deviation interpreted according to the criteria for interpreting the mean as follows:
An average of 4.51-5.00 means the highest level of opinion/practice
An average of 3.51-4.50 means a high level of opinion/practice
An average of 2.51-3.50 means a moderate level of opinion/practice
An average of 1.51-2.50 means a low level of opinion/practice
An average of 1.00-1.50 means the least level of opinion/practice
2) Analyze and assess the needs of students to behave according to students' opinions on the Sufficiency Economy

Philosophy by analyzing the Modified Priority Needs Index ($PNI_{Modified}$) which has the following formula

The Modified Priority Needs Index ($PNI_{Modified}$) is calculated using the following formula

$$PNI_{Modified} = (I - D) / D$$

Where:

I (Importance) represents the desired level of conditions that should occur (Expected State)
D (Degree of Success) represents the current level of actual conditions (Current State)

Results of Data Analysis

Basic Information of Survey Respondents

The demographic analysis revealed that the majority of respondents were female (54.44%), studying at the third-year level (85.00%), with an average academic performance ranging from 3.01 to 3.50 (53.33%). Regarding their understanding of Sufficiency Economy Philosophy, most respondents reported learning about it primarily through formal teaching and learning processes (27.62%), followed by online media (24.13%) and traditional media such as radio and television (17.66%). In terms of comprehension, the majority understood Sufficiency Economy Philosophy as a matter of the middle path and moderation (27.16%), followed by the concept of three principles and two conditions (18.90%). Additionally, some respondents understood it as encompassing three principles and two conditions with the ultimate goal of achieving balance and preparedness for change. Most respondents reported applying Sufficiency Economy Philosophy in their daily lives, primarily through financial planning, including spending management, saving, and budgeting (23.75%). This was followed by its application in daily life and future planning (15.74%), and planning for living arrangements and meals both at home and/or at university (14.59%).

Analysis of Current and Expected Conditions of Student Behavior Based on Sufficiency Economy Philosophy

This analysis assessed the developmental needs for implementing Sufficiency Economy Philosophy based on student perspectives. The statistical approach employed the Modified Priority Needs Index ($PNI_{Modified}$) in descending order to rank priority areas. A higher index value indicates greater developmental need compared to areas with lower index values. The findings are presented through comprehensive tables that include both overall analysis and detailed item-by-item breakdowns, as demonstrated in Tables 1– 10.

Table 1: Priority Ranking of Needs for Implementing Sufficiency Economy Philosophy Based on Students' Opinions

Conduct on the Sufficiency Economy Philosophy	Current State (D)			Expected State (I)			$PNI_{Modified}$	Rank
	$\bar{x}$	SD	level	$\bar{x}$	SD	level		
1. Goal setting for thinking, practice, and work (establishing work compass)	3.56	0.54	high	4.48	0.59	high	0.26	5
2. Assessing knowledge proficiency for thinking, practice, and work (considering knowledge conditions)	3.57	0.56	high	4.47	0.58	high	0.25	7
3. Assessing feasibility of thinking, practice, and work (examining factors and balance across four dimensions: material/economic, social, environmental, and cultural)	3.47	0.60	moderate	4.41	0.62	high	0.27	3
4. Careful work planning and development (developing plans using Sufficiency Economy Philosophy principles)	3.55	0.67	high	4.47	0.62	high	0.26	5
5. Self-assessment and applying moderation principles (formulating plans using the moderation principle)	3.57	0.59	high	4.47	0.58	high	0.25	7
6. Risk prediction and readiness for change (good built-in immunity)	3.36	0.65	moderate	4.42	0.64	high	0.32	1
7. Taking action as thought or planned (Implementation of the plan)	3.59	0.54	high	4.48	0.57	high	0.25	7

8. Evaluation and improvement of practical thinking (performance and work evaluation)	3.38	0.65	moderate	4.39	0.62	high	0.30	2
9. Reflective thinking and learning summary (learning summary)	3.53	0.53	high	4.49	0.59	high	0.27	3

According to Table 1 presents the priority ranking of needs for implementing Sufficiency Economy Philosophy based on students' opinions, using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that risk prediction and readiness for change (building good self-immunity) ranked as the highest priority need ($PNI_{Modified}$ = 0.32). This was followed by evaluation and improvement of practical thinking (performance and work evaluation) with a $PNI_{Modified}$ value of 0.30, and reflective thinking and learning summary (learning summary) with a $PNI_{Modified}$ value of 0.27.

Table 2: Priority Ranking of Student Needs for Implementing Sufficiency Economy Philosophy: Goal Setting in Thinking, Practice, and Work (Establishing Work Direction)

Establishing Objectives for Thinking, Practice, and Work	**Current State (D)**			**Expected State (I)**			**$PNI_{Modified}$**	**Rank**
	$\bar{x}$	**SD**	**level**	**$\bar{x}$**	**SD**	**level**		
1. Determine the purpose of thinking, practice, and work consistently	3.37	0.73	moderate	4.46	0.70	high	0.32	2
2. Define the purpose of thinking, practice, and work clearly and concretely each time	3.23	0.83	moderate	4.43	0.80	high	0.37	1
3. Establish objectives that are important and worthwhile to pursue	3.62	0.78	high	4.44	0.72	high	0.23	5
4. Ensure the set objectives are beneficial to oneself, others, and the community	3.65	0.72	high	4.52	0.71	highest	0.24	4
5. Formulate genuine, legitimate, and transparent purposes	3.57	0.83	high	4.46	0.75	high	0.25	3
6. Develop objectives that do not negatively impact yourself or others	3.78	0.97	high	4.60	0.69	highest	0.22	7
7. Create objectives with realistic possibilities for success	3.68	0.76	high	4.51	0.68	highest	0.23	5

According to Table 2, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in goal setting for thinking, practice, and work (establishing work direction) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that "define the purpose of thinking, practice, and work clearly and concretely each time" represents the highest priority need ($PNI_{Modified}$ = 0.37), followed by "determine the purpose of thinking, practice, and work consistently" ($PNI_{Modified}$ = 0.32), and "formulate genuine, legitimate, and transparent purposes" ($PNI_{Modified}$ = 0.25), respectively.

Table 3. Priority Ranking of Student Needs for Sufficiency Economy Philosophy Implementation: Assessing Knowledge Proficiency for Thinking, Practice, and Work (Considering Knowledge Conditions)

Assessing Knowledge Proficiency for Thinking, Practice, and Work	**Current State (D)**			**Expected State (I)**			**$PNI_{Modified}$**	**Rank**
	$\bar{x}$	**SD**	**level**	**$\bar{x}$**	**SD**	**level**		
1. Evaluate your competence in the subject matter you plan to engage with or implement consistently	3.33	0.86	moderate	4.33	0.75	high	0.30	1
2. Identify what knowledge you need to acquire to accomplish your intended goals	3.51	0.74	high	4.50	0.69	high	0.28	2
3. Understand how to study and process information clearly, and know what actions to take when you have gained understanding	3.49	0.74	moderate	4.42	0.75	high	0.27	3
4. Know how to seek and gather relevant information	3.75	0.86	high	4.57	0.67	highest	0.22	4

5. Know how to apply and utilize acquired knowledge effectively	3.75	0.78	high	4.57	0.65	highest	0.22	4

According to Table 3, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in assessing knowledge proficiency for thinking, practice, and work (considering knowledge conditions) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that "evaluate your competence in the subject matter you plan to engage with or implement consistently" represents the highest priority need ($PNI_{Modified}$ = 0.30), followed by "identify what knowledge you need to acquire to accomplish your intended goals" ($PNI_{Modified}$ = 0.28), and "understand how to study and process information clearly, and know what actions to take when you have gained understanding" ($PNI_{Modified}$ = 0.27), respectively.

Table 4: Priority Ranking of Student Needs for Sufficiency Economy Philosophy Implementation: Assessing Feasibility of Thinking, Practice, and Work (Examining Factors and Balance Across Four Dimensions; material/economic, social, environmental, and cultural)

Assessing Feasibility of Thinking, Practice, and Work	Current State (D)			Expected State (I)			$PNI_{Modified}$	Rank
	$\bar{x}$	SD	level	$\bar{x}$	SD	level		
1. Identify what factors are needed to accomplish your intended goals	3.55	0.76	high	4.49	0.69	high	0.26	4
2. Evaluate factors across four dimensions: 1) material/ economic/financial, 2) social, 3) environmental, and 4) cultural aspects that may affect your planned activities	3.37	0.90	moderate	4.40	0.74	high	0.31	1
3. Assess whether various factors are sufficient, or if insufficient, determine how to obtain additional resources	3.44	0.79	moderate	4.46	0.67	high	0.30	2
4. Determine the appropriate use of various factors to avoid negative impacts on those resources	3.44	0.84	moderate	4.36	0.82	high	0.27	3
5. Evaluate various factors and decide whether to proceed with your plans or identify necessary adjustments to continue effectively	3.52	0.82	high	4.40	0.78	high	0.25	5

According to Table 4, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in assessing feasibility of thinking, practice, and work (examining factors and balance across four dimensions) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that "evaluate factors across four dimensions: 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural aspects that may affect your planned activities" represents the highest priority need ($PNI_{Modified}$ = 0.31), followed by "assess whether various factors are sufficient, or if insufficient, determine how to obtain additional resources" ($PNI_{Modified}$ = 0.30), and "determine the appropriate use of various factors to avoid negative impacts on those resources" ($PNI_{Modified}$ = 0.27), respectively.

Table 5: Priority Ranking of Student Needs for Sufficiency Economy Philosophy Implementation: Developing Comprehensive Work Plans (Formulating Plans Using Sufficiency Economy Philosophy Principles)

Developing Comprehensive Work Plans	Current State (D)			Expected State (I)			$PNI_{Modified}$	Rank
	$\bar{x}$	SD	level	$\bar{x}$	SD	level		
1. Identify what tasks need to be accomplished to achieve your goals	3.60	0.82	high	4.45	0.80	high	0.24	6
2. Determine what specific work needs to be completed to reach those objectives	3.57	0.78	high	4.56	0.62	highest	0.28	1
3. Prioritize tasks by determining what should be done first and what should follow	3.61	0.97	high	4.53	0.71	highest	0.25	5

4. Identify who is involved in the work and establish coordination methods	3.51	0.88	high	4.46	0.77	high	0.27	3
5. Know how to measure and evaluate each step of the work process	3.47	0.91	moderate	4.43	0.77	high	0.28	1
6. Develop detailed step-by-step work plans consistently	3.53	0.93	high	4.44	0.79	high	0.26	4

According to Table 5, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in developing comprehensive work plans (formulating plans using Sufficiency Economy Philosophy principles) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that two items shared the highest priority need ($PNI_{Modified}$ = 0.28): "determine what specific work needs to be completed to reach those objectives" and "know how to measure and evaluate each step of the work process." These were followed by "identify who is involved in the work and establish coordination methods" ($PNI_{Modified}$ = 0.27), and "develop detailed step-by-step work plans consistently" ($PNI_{Modified}$ = 0.26), respectively.

Table 6. Priority Ranking of Student Needs for Sufficiency Economy Philosophy Implementation: Self Assessment and Applying Moderation Principles (Formulating Plans Using the Moderation Principle)

Self-Assessment and Applying Moderation Principles	**Current State (D)**			**Expected State (I)**			**$PNI_{Modified}$**	**Rank**
	$\bar{x}$	**SD**	**level**	$\bar{x}$	**SD**	**level**		
1. Ensure that the work to be undertaken is moderate and appropriate for yourself	3.52	0.84	high	4.45	0.73	high	0.26	1
2. Develop a plan that is suitable for oneself and does not cause personal difficulties in both the short and long term	3.54	0.83	high	4.47	0.69	high	0.26	1
3. Consider a plan that is suitable for others and does not cause trouble to others in both the short and long term	3.64	0.93	high	4.47	0.79	high	0.23	5
4. Evaluate the plan for appropriateness across four dimensions: 1) material/ economic/financial, 2) social, 3) environmental, and 4) cultural	3.56	0.77	high	4.45	0.69	high	0.25	4
5. Consider adjusting the plan to suit changing situations, timing, problems, or needs	3.59	0.72	high	4.51	0.69	highest	0.26	1

According to Table 6, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in self-assessment and applying moderation principles (formulating plans using the moderation principle) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that three items shared the highest priority need ($PNI_{Modified}$ = 0.26): "ensure that the work to be undertaken is moderate and appropriate for yourself," "develop a plan that is suitable for oneself and does not cause personal difficulties in both the short and long term," and "consider adjusting the plan to suit changing situations, timing, problems, or needs." These were followed by "evaluate the plan for appropriateness across four dimensions: 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural" ($PNI_{Modified}$ = 0.25), and "consider a plan that is suitable for others and does not cause trouble to others in both the short and long term" ($PNI_{Modified}$ = 0.23), respectively.

Table 7: Priority Ranking of Student Needs for Sufficiency Economy Philosophy Implementation: Risk Prediction and Readiness for Change (Good Built-in Immunity)

Risk Prediction and Change Preparedness	**Current State (D)**			**Expected State (I)**			**$PNI_{Modified}$**	**Rank**
	$\bar{x}$	**SD**	**level**	$\bar{x}$	**SD**	**level**		
1. Recognize that the plan may encounter problems at some point or experience work delays	3.44	0.79	moderate	4.41	0.76	high	0.28	4

2. Know what actions to take to prevent problems or resolve issues that may arise	3.36	0.78	moderate	4.47	0.68	high	0.33	2
3. Develop the ability to cope with potential future negative consequences	3.30	0.90	moderate	4.47	0.75	high	0.35	1
4. Build capacity to adapt to potential changes across four dimensions: 1) material/ economic/financial, 2) social, 3) environmental, and 4) cultural	3.33	0.86	moderate	4.37	0.80	high	0.31	3

According to Table 7, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in risk prediction and change preparedness (building effective self-immunity) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that "develop the ability to cope with potential future negative consequences" represents the highest priority need ($PNI_{Modified}$ = 0.35), followed by "know what actions to take to prevent problems or resolve issues that may arise" ($PNI_{Modified}$ = 0.33), and "build capacity to adapt to potential changes across four dimensions: 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural" ($PNI_{Modified}$ = 0.31), respectively.

Table 8: Priority Ranking of Student Needs for Sufficiency Economy Philosophy Implementation: Plan Implementation and Execution (Implementation the Plan)

Plan Implementation and Execution	**Current State (D)**			**Expected State (I)**			**$PNI_{Modified}$**	**Rank**
	$\bar{x}$	**SD**	**level**	$\bar{x}$	**SD**	**level**		
1. Implement work according to the established plan	3.56	0.81	high	4.58	0.63	highest	0.29	1
2. Understand what can or cannot be accomplished according to the plan and identify the reasons why	3.51	0.71	high	4.41	0.68	high	0.26	3
3. Recognize what is being done well and what is not being accomplished effectively, and understand the underlying causes	3.57	0.78	high	4.45	0.79	high	0.25	4
4. Apply and cultivate virtues (e.g., honesty, diligence, patience, prudence, and carefulness) while working, and understand what actions should or should not be taken	3.69	0.83	high	4.53	0.69	highest	0.23	6
5. Apply knowledge in operations appropriately, prudently, and carefully	3.69	0.80	high	4.52	0.70	highest	0.22	7
6. Execute each step of work properly with appropriate balance-neither excessive nor insufficient-and know how to make necessary adjustments	3.53	0.80	high	4.48	0.75	high	0.27	2
7. Identify what needs to be improved, corrected, or enhanced to ensure work success	3.55	0.84	high	4.42	0.80	high	0.25	4

According to Table 8, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in plan implementation and execution (Implementation of the plan) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that "implement work according to the established plan" represents the highest priority need ($PNI_{Modified}$ = 0.29), followed by "execute each step of work properly with appropriate balance-neither excessive nor insufficient-and know how to make necessary adjustments" ($PNI_{Modified}$ = 0.27), and "understand what can or cannot be accomplished according to the plan and identify the reasons why" ($PNI_{Modified}$ = 0.26), respectively.

Table 9: Priority Ranking of Student Needs for Sufficiency Economy Philosophy Implementation: Performance Evaluation and Improvement (Performance and Work Evaluation)

Performance Evaluation and Improvement	Current State (D)			Expected State (I)			$PNI_{Modified}$	Rank
	$\bar{x}$	SD	level	$\bar{x}$	SD	level		
1. Establish methods and criteria for evaluating performance and work processes	3.32	0.87	moderate	4.34	0.79	high	0.31	2
2. Develop methods and criteria for evaluating oneself and colleagues	3.36	0.88	moderate	4.36	0.77	high	0.30	3
3. Analyze the reasons why performance meets or fails to meet desired outcomes	3.41	0.83	moderate	4.34	0.82	high	0.27	6
4. Assess the impact of both positive and negative operational results	3.42	0.85	moderate	4.46	0.73	high	0.30	3
5. Identify problems associated with knowledge deficiencies and determine solutions for addressing them	3.45	0.83	moderate	4.45	0.73	high	0.29	5
6. Identify problems related to lack of virtues and determine strategies for improvement	3.32	0.79	moderate	4.42	0.83	high	0.33	1

According to Table 9, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in performance evaluation and improvement (performance and work evaluation) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that "identify problems related to lack of virtues and determine strategies for improvement" represents the highest priority need ($PNI_{Modified}$ = 0.33), followed by "establish methods and criteria for evaluating performance and work processes" ($PNI_{Modified}$ = 0.31), and two items that tied for third priority ($PNI_{Modified}$ = 0.30): "develop methods and criteria for evaluating oneself and colleagues" and "assess the impact of both positive and negative operational results," respectively.

Table 10: Priority Ranking of Student Needs for Sufficiency Economy Philosophy Implementation: Reflective Thinking and Learning Summary (Learning Summary)

Reflective Thinking and Learning Synthesis	Current State (D)			Expected State (I)			$PNI_{Modified}$	Rank
	$\bar{x}$	SD	level	$\bar{x}$	SD	level		
1. Extract lessons from thinking processes and past operations	3.75	0.77	high	4.58	0.66	highest	0.22	10
2. Summarize lessons from significant experiences, both positive and negative	3.55	0.79	high	4.51	0.72	highest	0.27	7
3. Synthesize lessons related to the principle of moderation	3.44	0.76	moderate	4.48	0.69	high	0.30	3
4. Synthesize lessons related to the principle of reasoning	3.46	0.79	moderate	4.47	0.75	high	0.29	4
5. Summarize lessons related to building effective self-immunity	3.41	0.78	moderate	4.40	0.80	high	0.29	4
6. Synthesize lessons related to knowledge conditions (knowledge, prudence, and caution)	3.47	0.75	moderate	4.48	0.70	high	0.29	4
7. Summarize lessons related to moral conditions	3.38	0.85	moderate	4.43	0.79	high	0.31	2
8. Extract lessons related to balance across four dimensions 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural	3.38	0.80	moderate	4.45	0.78	high	0.32	1
9. Apply the lessons learned to real-life situations	3.72	0.81	high	4.51	0.79	highest	0.21	11

10. Process all lessons to enhance the quality and effectiveness of future work	3.62	0.76	high	4.53	0.71	highest	0.25	8
11. Share and transfer lessons learned from work experiences with others	3.64	0.75	high	4.53	0.73	highest	0.24	9

According to Table 10, the results of the assessment of needs for implementing Sufficiency Economy Philosophy in reflective thinking and learning synthesis (learning summary) are presented, ranked by priority using the Modified Priority Needs Index ($PNI_{Modified}$). The analysis revealed that "extract lessons related to balance across four dimensions: 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural" represents the highest priority need ($PNI_{Modified} = 0.32$), followed by "summarize lessons related to moral conditions" ($PNI_{Modified} = 0.31$), and "synthesize lessons related to the principle of moderation" ($PNI_{Modified} = 0.30$), respectively.

CONCLUSIONS AND DISCUSSION

Conclusions

Basic Information of Survey Respondents

Analysis of the sample revealed that most respondents learned about Sufficiency Economy Philosophy primarily through teaching and learning (27.62%). However, the majority of respondents did not fully understand the philosophy, with only 17.25% correctly understanding that Sufficiency Economy Philosophy is a matter of three loops and two conditions with the goal of balance and readiness for change. Most respondents apply Sufficiency Economy Philosophy in daily life through planning spending, saving, and budgeting (23.75%), followed by daily life and future life planning.

Level of Sufficiency Economy Philosophy Implementation

The analysis revealed that students applied Sufficiency Economy Philosophy to a high level in five areas: 1) goal setting for thinking, practice, and work (establishing work compass), 2) assessing knowledge proficiency for thinking, practice, and work (considering knowledge conditions), 3) careful work planning and development (developing plans using Sufficiency Economy Philosophy principles), 4) self-assessment and applying moderation principles (formulating plans using the moderation principle), and 5) taking action as thought or planned (implementation of the plan). Three areas were practiced at a moderate level: 1) assessing feasibility of thinking, practice, and work (examining factors and balance across four dimensions: material/economic, social, environmental, and cultural), 2) risk prediction and readiness for change (good built-in immunity), and 3) evaluation and improvement of practical thinking (performance and work evaluation).

Priority Developmental Needs

The needs assessment for developing and promoting student teachers' application of Sufficiency Economy Philosophy revealed the top priority areas based on student perspectives. The analysis found that the highest priority need was: 1) risk prediction and readiness for change (good built-in immunity) with $PNI_{Modified} = 0.32$, followed by 2) evaluation and improvement of practical thinking (performance and work evaluation) with $PNI_{Modified} = 0.30$, and 3) two areas tied for third priority with $PNI_{Modified} = 0.27$: assessing feasibility of thinking, practice, and work (examining factors and balance across four dimensions: material/economic, social, environmental, and cultural) and reflective thinking and learning summary (learning summary).

When examining specific items within each area in table 2-10, the highest priority needs were:

1)Define the purpose of thinking, practice, and work clearly and concretely each time ($PNI_{Modified} = 0.37$)
2)Evaluate your competence in the subject matter you plan to engage with or implement consistently ($PNI_{Modified} = 0.30$)
3)Evaluate factors across four dimensions: 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural aspects that may affect your planned activities ($PNI_{Modified} = 0.31$)
4)Determine what specific work needs to be completed to reach those objectives ($PNI_{Modified} = 0.28$)
5)Ensure that the work to be undertaken is moderate and appropriate for yourself/ Develop a plan that is suitable for oneself and does not cause personal difficulties in both the short and long term/ Consider adjusting the plan to suit changing situations, timing, problems, or needs ($PNI_{Modified} = 0.26$)
6)Develop the ability to cope with potential future negative consequences ($PNI_{Modified} = 0.35$)
7)Implement work according to the established plan ($PNI_{Modified} = 0.29$)
8)Identify problems related to lack of virtues and determine strategies for improvement ($PNI_{Modified} = 0.33$)
9)Extract lessons related to balance across four dimensions: 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural ($PNI_{Modified} = 0.32$)

Discussion

Understanding and Application of Sufficiency Economy Philosophy

Based on the demographic data, students acquired knowledge about Sufficiency Economy Philosophy primarily through formal education (27.62%). Although all educational institutions are required to integrate Sufficiency Economy Philosophy teaching across all grade levels, the researcher's observations of teaching and learning management in schools revealed that educational approaches often focus on isolated aspects, such as moderation, reasonableness, and self-immunity. Schools frequently emphasize savings and financial deposits with a focus on self-sufficiency, or teach agricultural practices without comprehensive integration.

The challenge in applying Sufficiency Economy Philosophy to the education system stems from teachers' inability to design effective learning management strategies. There is a lack of learning processes that help students understand and develop accurate concepts of Sufficiency Economy Philosophy. Teachers often present the three principles and two conditions of Sufficiency Economy Philosophy in a fragmented manner, teaching each component separately without demonstrating their interconnections, and assessing student learning outcomes through isolated assignments. Furthermore, teachers themselves lack understanding of the challenges inherent in teaching Sufficiency Economy Philosophy effectively.

Consequently, only 17.25% of students demonstrated comprehensive understanding of Sufficiency Economy Philosophy as an integrated framework of three principles and two conditions aimed at achieving balance and preparedness for change. Regarding practical application, 23.75% of students applied Sufficiency Economy Philosophy in their daily lives, primarily through financial planning and budgeting.

These findings indicate the necessity for developing training courses and educational programs that prepare both students and teachers to effectively manage learning experiences for students. Teaching and learning management should be conceptualized as a comprehensive process of thinking and practice that must be systematically promoted for learners, as emphasized by Khammani (2015).

The Level of Application of Sufficiency Economy Philosophy by Student Teachers

Analysis of Sufficiency Economy Philosophy application levels revealed that student teachers implemented the philosophy at varying degrees across nine main areas. Results showed that student teachers demonstrated high-level practice (mean scores ranging from 3.55-3.59) in five areas: goal setting for thinking, practice, and work (establishing work compass) ($\bar{x}$ = 3.56); assessing knowledge proficiency for thinking, practice, and work (considering knowledge conditions) ($\bar{x}$ = 3.57); careful work planning and development (developing plans using Sufficiency Economy Philosophy principles) ($\bar{x}$ = 3.55); self-assessment and applying moderation principles (formulating plans using the moderation principle) ($\bar{x}$ = 3.57); and taking action as thought or planned (implementation of the plan) ($\bar{x}$ = 3.59).

However, three critical areas demonstrated only moderate-level application: assessing feasibility of thinking, practice, and work (examining factors and balance across four dimensions: material/economic, social, environmental, and cultural) ($\bar{x}$ = 3.47); risk prediction and readiness for change (good built-in immunity) ($\bar{x}$ = 3.36); and evaluation and improvement of practical thinking (performance and work evaluation) ($\bar{x}$ = 3.38). Additionally, reflective thinking and learning summary (learning summary) showed high-level practice ($\bar{x}$ = 3.53).

The moderate application levels in critical thinking areas, particularly risk prediction and change preparedness, suggest that student teachers may lack sophisticated analytical skills required for comprehensive Sufficiency Economy Philosophy implementation. These areas demand higher-order thinking capabilities, including systematic analysis across multiple dimensions, anticipatory thinking for risk management, and reflective evaluation skills. As indicated by the $PNI_{Modified}$ values, these complex cognitive processes require targeted developmental interventions to enhance student teachers' competencies in applying Sufficiency Economy Philosophy principles effectively in educational contexts.

These findings present some contradictions with research by Sawangkan et al. (2021), which found that students demonstrate high-level living behaviors according to Sufficiency Economy Philosophy overall. The Sufficiency Economy Philosophy aligns with Thai lifestyle and culture, making it easily understood, adaptable at all levels, and flexible (von Feigenblatt et al., 2022). However, applying Sufficiency Economy Philosophy in practice requires developing comprehensive thinking processes, including situation assessment, planning, risk management, and continuous self-development through reflection.

The Need to Develop and Promote the Application of Sufficiency Economy Philosophy Among Student Teachers

Needs analysis using the Modified Priority Needs Index ($PNI_{Modified}$) revealed significant developmental gaps in student teachers' application of Sufficiency Economy Philosophy, with priority needs ranging from 0.22 to 0.37

across all dimensions. The highest priority area identified was risk prediction and readiness for change (good built-in immunity) ($PNI_{Modified}$ = 0.32), followed by evaluation and improvement of practical thinking (performance and work evaluation) ($PNI_{Modified}$ = 0.30). Tied for third priority were assessing feasibility of thinking, practice, and work and reflective thinking and learning summary (both $PNI_{Modified}$ = 0.27).

The analysis revealed that the most urgent need was to "define the purpose of thinking, practice, and work clearly and concretely each time" ($PNI_{Modified}$ = 0.37), indicating that student teachers experience difficulty establishing clear and specific objectives for their activities. This fundamental weakness in goal-setting capabilities reflects the absence of systematic thinking processes necessary for effective Sufficiency Economy Philosophy implementation.

The second highest priority was "develop the ability to cope with potential future negative consequences" ($PNI_{Modified}$ = 0.35), demonstrating significant deficiencies in risk management and resilience-building capabilities. This finding is particularly concerning because self-immunity constitutes a core principle of Sufficiency Economy Philosophy, requiring individuals to anticipate and prepare for various challenges and uncertainties.

Other critical developmental needs included "identify problems related to lack of virtues and determine strategies for improvement" ($PNI_{Modified}$ = 0.33) and "extract lessons related to balance across four dimensions" ($PNI_{Modified}$ = 0.32), highlighting weaknesses in moral self-assessment and holistic thinking across material/economic, social, environmental, and cultural dimensions. These findings indicate that student teachers require comprehensive development addressing both cognitive and affective domains. The high $PNI_{Modified}$ values across all areas suggest that current teacher education curricula inadequately prepare student teachers for the complex, multidimensional thinking required for authentic Sufficiency Economy Philosophy integration. Risk management, moral reflection, and holistic analysis represent essential competencies for modeling and teaching Sufficiency Economy Philosophy principles effectively in educational settings.

These analytical results align with the practical level assessment findings, confirming that students still lack these essential skills and reflecting the urgent need for targeted development. The application of Sufficiency Economy Philosophy enables teachers to become self-reliant, influencing teacher characteristics by emphasizing honesty, patience, perseverance, diligence, wisdom, and prudence for achieving balanced living and effective adaptation to change (Ariratana et al., 2013; Phoyen, 2015). This approach promotes both self-immunity development and high-level application of philosophical principles.

Additionally, priority developmental areas have been identified within each domain, including setting clear objectives, conducting self-assessment of environmental factors, and implementing proper planning-all of which represent skills and abilities essential for both personal life and teaching professional practice. Applying Sufficiency Economy Philosophy in teacher development must focus on building self-awareness, rational thinking, careful planning, and contextual adaptation. This approach aligns with research that developed learning programs based on Sufficiency Economy Philosophy, which successfully improved student teachers' thinking skills (Sricharoenpramong, 2019).

Guidelines for Cultivating Sufficiency Characteristics and Promoting the Application of Sufficiency Economy Philosophy in Teacher Education Curriculum and Training Processes

The results of this study suggest that Sufficiency Economy Philosophy application should be promoted in teacher education processes by focusing on building self-immunity and developing reflective assessment skills, strategic planning, and application of sufficiency principles in both personal life and professional practice. It is essential to focus on developing teachers' assessment capabilities and self-development competencies.

The curriculum should include learning modules on scenario planning, risk assessment methodologies, and adaptive capacity development. Specifically, addressing "develop the ability to cope with potential future negative consequences" ($PNI_{Modified}$ = 0.35) requires experiential learning approaches that expose student teachers to controlled challenges and uncertainties, allowing them to practice problem-solving and adaptation strategies.

The critical need for "evaluation and improvement of practical thinking (performance and work evaluation)" ($PNI_{Modified}$ = 0.30) indicates the necessity for embedding reflective practice throughout teacher education programs. This should incorporate structured reflection protocols, peer evaluation systems, and self-assessment frameworks. The urgent need to "identify problems related to lack of virtues and determine strategies for improvement" ($PNI_{Modified}$ = 0.33) suggests that moral and ethical development components must be explicitly integrated into coursework, practicum experiences, and ongoing professional development activities.

The highest individual item need, "define the purpose of thinking, practice, and work clearly and concretely each time" ($PNI_{Modified}$ = 0.37), reveals fundamental gaps in strategic thinking capabilities. Teacher education programs must incorporate systematic training in objective setting, action planning, and project management. This should include coursework on educational planning methodologies, learning outcome specification, and assessment design that emphasizes clarity, specificity, and measurability.

The needs for "evaluate factors across four dimensions: 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural aspects that may affect your planned activities" ($PNI_{Modified}$ = 0.31) and "extract lessons related to balance across four dimensions: 1) material/economic/financial, 2) social, 3) environmental, and 4) cultural" ($PNI_{Modified}$ = 0.32) indicate that teacher education curricula must adopt interdisciplinary approaches. Courses should integrate sustainability education, social justice perspectives, cultural responsiveness, and economic literacy to develop student teachers' capacity for holistic analysis and decision-making.

Teacher education programs should implement competency-based assessment systems that provide continuous feedback on student teachers' developing expertise. This includes portfolio-based assessment, performance-based evaluation, and self-monitoring tools that help student teachers track their professional growth. The curriculum should emphasize experiential and problem-based learning experiences that require student teachers to apply Sufficiency Economy Philosophy principles in educational contexts.

Creative problem-solving, adaptation to change, and balanced lifestyle practices according to Sufficiency Economy Philosophy can be integrated into teaching and learning through organized extracurricular activities that cultivate sufficiency characteristics and promote concrete application. An important factor that helps promote Sufficiency Economy Philosophy among students is the integration of sufficiency concepts into teaching and learning management. Extracurricular activities should be organized to develop life skills and provide inspiration through teacher role modeling, with practical learning activities that enable students to construct their own knowledge and apply it naturally. These extracurricular activities should allow students to study Sufficiency Economy Philosophy from diverse learning sources (Chhoun, 2022; Thumchuea et al., 2023).

From the discussion of the research results above, it is evident that this study provides empirical evidence regarding the implementation levels and developmental needs for applying Sufficiency Economy Philosophy among student teachers. These findings align with theoretical concepts and related research, highlighting the necessity for improving teacher education curricula and training processes to enhance capacities for applying Sufficiency Economy Philosophy in both personal development and teaching professional practice. This represents a crucial foundation that will enable teachers to serve as role models and effectively transmit sufficiency concepts to learners.

RECOMMENDATIONS

Recommendations for Implementation

1)Teacher Education Curriculum Development

Teacher education institutions can utilize the Modified Priority Needs Index ($PNI_{Modified}$) results as guidelines for curriculum improvement by focusing on developing priority competencies, including risk prediction and readiness for change, evaluation and improvement of practical thinking, and reflective thinking and learning summary. Institutions should design specific courses and activities that address these needs, such as risk management in education courses, reflective evaluation methodologies, and holistic analytical thinking programs.

2)Assessment Tool Application and Adaptation

The assessment instrument developed from the decoding of Sufficiency Economy Philosophy based on Khammani's (2015) nine core framework can be adapted as a guide for creating tools to measure and evaluate teacher competencies in diverse contexts. Additionally, the $PNI_{Modified}$ index can be utilized as a methodology for analyzing developmental needs in other professional fields that require Sufficiency Economy Philosophy integration in their practice.

Recommendations for Future Research

1)Conduct research and development (R&D) to create teacher education curricula that integrate Sufficiency Economy Philosophy based on Khammani's (2015) nine-core framework, with emphasis on developing experiential learning management models for Sufficiency Economy Philosophy application.

2)Develop learning management models suitable for cultivating specific competencies with high developmental needs, such as problem-based learning (PBL), project-based learning, and reflective learning approaches that enhance abilities to "develop the ability to cope with potential future negative consequences" and "define the purpose of thinking, practice, and work clearly and concretely each time." Research should encompass the development of learning activities, instructional materials, and assessment instruments aligned with the developed

models.

Declaration of Generative AI and AI-Assisted Technologies
During the preparation of this work, the authors used Claude AI to correct grammatical errors and improve readability. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Credit Authorship Contribution Statement
All authors have read and agreed to the published version of the manuscript.

Declaration of Competing Interest
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this manuscript.

References

Abdi, A.-R. M., & Nkomo, N. N. (2023). Teacher Professional Qualification and Experience: A Requisite for Effective Classroom Teaching in Banadir Region, Somalia. *International Journal of Education and Evaluation*, *9*(5), 19–29. https://doi.org/10.56201/ijee.v9.no5.2023.pg19.29

Ariratana, W., Pimtong, P., & Pitak, N. (2013). Teacher Professional Development for Learning Organization on Economy in Small Schools. *European Journal of Social & Behavioural Sciences*, doi: 10.15405/FUTUREACADEMY/EJSBS(2301-2218).2012.4.16

Cahyanti, A. D., Purwoko, B., Khamidi, A., Hariyati, N., & Roesminingsih, E. (2024). Fostering Student Motivation Through Teacher Competence. *Edukasia*. https://doi.org/10.62775/edukasia.v5i1.846

Chaipattana Foundation. (2020). *Philosophy of sufficiency economy*. Retrieved May 2024, from https://www.chaipat.or.th/component/html5flippingbook/publication/

Chhoun, P. N. (2022). Teaching Social Studies Model Based on Sufficiency Economy Philosophy. *Journal of Social Religion and Culture, 3*(2), 80-93.

Dechakup, P., & Yindeesuk, P. (2017). *7C skills of teacher 4.0*. Chulalongkorn University Press.

Dharmapiya, P., & Saratun, M. (2016). Cultivating a sufficiency mindset in Thai schools. In G. C. Avery & H. Bergsteiner (Eds.), *Sufficiency thinking: Thailand's gift to an unsustainable world* (pp. 159-180).

Dharmapiya, P., & Saratun, M. (2020). Cultivating a sufficiency mindset in Thai schools. In *Sufficiency thinking* (pp. 129-147). Routledge.

Karacaoğlu, Ö. C. (2024). How Should a Teacher Be According to The Teacher's Views? *Education Policy and Development*, *2*(1), 61–74. https://doi.org/10.31098/epd.v2i1.2090

Khaemmani, T. (2015). *Decoding the philosophy of sufficiency economy to teaching thinking processes*. Chulalongkorn University Press.

Khaemmani, T., Rittidech, P., & Kaewaj, P. (2016). Decoding the philosophy of sufficiency economy to teaching thinking processes. *Journal of Research and Development Institute Rajabhat Maha Sarakham University*, *3*(2), 187-192.

Kiryakova, G., & Kozhuharova, D. (2024). The Digital Competences Necessary for the Successful Pedagogical Practice of Teachers in the Digital Age. *Neveléstudomány*. https://doi.org/10.3390/educsci14050507

Kulikova, T. I. (2024). digital teacher: new roles, functions and competences. *Russian Journal of Education and Psychology*, *15*(4), 482–497. https://doi.org/10.12731/2658-4034-2024-15-4-560

Lunawong, D. (2022). *The Needs of the Teacher Leadership Development in Instructional Management Based on the Principles of Sufficiency Economy Philosophy in Bankhokkongmittraphap School*, Bueng Kan Primary Educational Service Area Office. Interdisciplinary Academic and Research Journal, *2*(6), 776-780.

Malynovska, I., & Barantsova, I. (2024). The role of soft skills in teacher training in the modern educational process. *Academia Polonica.*, *66*(5), 32–37. https://doi.org/10.23856/6604

Ministry of Education. (2017). Learning Standards Indicators in Basic Education Curriculum 2008 (Revised Edition 2017). The Agricultural Co-operative Federation of Thailand., Ltd. http://academic.obec.go.th/images/document/1525235513_d_1.pdf

Nadeem, F., Imran, H., & Asim, I. (2025). Effect of Teachers' Competencies on Students' Academic Achievement: A Comparative Analysis of Public and Private Universities, Lahore. *The Critical Review of Social Sciences Studies*, *3*(1), 689–702. https://doi.org/10.59075/k4fbq258

Napitupulu, M. H., Muddin, A., Bagiya, B., Diana, S., & Rosyidah, N. S. (2024). Teacher Professional Development in the Digital Age: Strategies for Integrating Technology and Pedagogy. *Global International Journal of Innovative Research*, *2*(10), 2382–2396. https://doi.org/10.59613/global.v2i10.334

Office of the Basic Education Commission. (2022). *Announcement of model schools for learning activities and management according to the philosophy of sufficiency economy (sufficiency schools) for the academic year 2022*.

Office of the Education Council Secretariat. (2017). *National Education Plan 2017-2036*. http://backoffice.onec.go.th/uploaded/Outstand/2017-EdPlan60-79.pdf

Office of the National Economic and Social Development Council. (2023). *The thirteenth national economic and social development plan* (2023-2027). Office of the Prime Minister. https://www.nesdc.go.th/nesdb_en/ewt_dl_link.php?nid=4500

Phoyen, K. (2015). The effects of teaching using conceptual instructional model to develop moral and ethics in teaching profession based on sufficiency economy philosophy on ethics in teaching profession of students in Faculty of Education, Silpakorn University. Silpakorn University Journal of Education, *12*(1, 2), 49-64.

Sawangkan, K., Junlapak, P., & Buaban, M. (2021). Lifestyle Behaviors according to the Sufficiency Economy Philosophy of Students at Nakhon Si Thammarat Rajabhat University. *Journal of Academic Information and Technology, 2*(1), 17-27.

Sricharoenpramong N. (2019). Development of Sufficiency Economy Instructional Program to Promote Thinking Skills of Professional Teacher Students. *Dhonburi Rajabhat University Journal, 13*(1), 66-77.

Suwattee, A., Niemted, W., Chusuwan, R., & Tansakul, J. (2022). Needs Assessment for Improving School Administration Based on Sufficiency Economy Philosophy of Primary Schools in Three Southern Border Provinces. *Princess of Naradhiwas University Journal of Humanities and Social Sciences, 9*(1), 170-186.

Sydorenko, V., Dzhus, O., Kozenko, R. V., Ivanenko, O. A., & Zavadska, T. (2022). Developing Teachers' Soft Skills within the New Educational Paradigm: Competences, Values, Indicators, Results. *Acta Paedagogica Vilnensia*, *49*, 23–42. https://doi.org/10.15388/actpaed.2022.49.2

Tanyabut, P., Subsandee, P., & Tapwijitr, A. (2022). A study of the necessary needs in the development of learning achievement in the course of Education Philosophy and Sufficiency Economy of the first year students at the Faculty of Education Chandrakasem Rajabhat University. *Mahachula Academic Journal, 9*(3), 335-346.

Teongchon, R., & Prasertphorn, V. (2023). States, Needs and Guidelines for school Administration According to the Sufficient Economy Philosophy of Schools under Khon Kaen Primary Educational Service Area Office 3. *Education journal Faculty of Education, Nakhon Sawan Rajabhat University, 6*(3), 147-158.

Thai Ministry of Education. (2017). *Indicators and content areas in science (revised curriculum A.D. 2017) according to Basic Education Core Curriculum B.E. 2551 (A.D. 2008).* The Agricultural Co-operative Federation of Thailand Press.

Thumchuea, N., Dhoppupa, K. C., Ngoenbat, W., Phanthong, C., & Nilacupt, K. (2023). Developing guidelines for upgrading general education courses on applying the sufficiency economy philosophy in real life. *Docens Series in Education*, *4*, 32–43. https://doi.org/10.20319/dv4.3243

United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development. https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

von Feigenblatt, O. F., Cooper, M., & Pardo, P. (2022). Sufficiency Economy Philosophy (SEP): Thailand's mic Approach to Governance and Development as Evidence of an Asian Value-Oriented Inclusive Leadership Management Philosophy. *Strategic Analysis, 46*(4), 430–440.

Wongwanich, S. (2019). *Needs assessment research (4th ed.)*. Chulalongkorn University Press.

Yamane, T. (1973). *Statistics : An Introductory Analysis*. (2rd ed.) New York : Harper. and Row

Zhang, J., & Wu, Y. (2025). Impact of university teachers' digital teaching skills on teaching quality in higher education. *Cogent Education*, *12*(1). https://doi.org/10.1080/2331186x.2024.2436706