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Development of the Participatory Integrated Supervision Process Affecting the Teachers' Competencies as Classroom Research on Learning Problem-solving

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Abstract: - *Educational supervision is important to the performance and behavior change in the teachers as learning management. Specific purposes to development of The participatory integrated supervision process affecting the teachers' competencies as classroom research in learning problem-solving of the schools into a study with the participants include school directors and teachers into the collections to the data. Need assessment of supervision affecting teachers' competencies by the highest needs was participatory self-improvement. The participatory integrated supervision process of 4th key factor affecting the teachers' competencies in classroom research in learning problem solving, CFA associated with The participatory integrated supervision process was significant at levels of 0.01. The teachers got higher scores after training, and teachers' competencies were at a level of excellent including the relationship between knowledge with competencies to positive relationship, and the level of satisfaction was also high. Participation in the integrated supervision process was to support learning management to be the effectiveness and supervision has been conceived as the improvement of the teaching and learning process for the ultimate benefit of the learner.*

Keywords: The participatory integrated supervision process; Teachers' Competencies; Classroom Research; Learning Problem-Solving

Introduction

Human being made culture and continue to make culture for their survival and comfort in the community. As the community expands, there will be cultural diversity. The school is large and multicultural, especially in the marginal schools in the north of Thailand, where there is a cultural diversity of ethnic people. The study of relevant documents found that culture affects human being and their education (Parimit, K., & Newvarat, K, (2021). However, supervision is supported in learning management to effectiveness. Education is the process of learning for the growth of individuals and society through knowledge transfer, training, cultural continuity, and academic advancement in knowledge creation is a mechanism for developing competence and abilities that instills ideas in citizens and youth who are important variables of their ability to long-term competitiveness (Jedaman, P., Jongmuanwai, B., & et al, 2021). Planning an educational system to drive holistic development to be successful inevitably requires an understanding of the relevant elements, from conceptualization and practice to taking into account landscape and sociology together. There is a development process from Enabling all sectors to participate in the implementation and principles of public interest Education is a development to reduce inequality, create equality of competence, and focus on skills, knowledge, and innovation, including thinking critically. Have judgment and creativity in learning management following the 21st century (Ministry of Education, 2018). For the dynamics of the 21st century, knowledge-based education requires a broad range of knowledge when digging into the issue of human resource provisioning (Quality Learning Foundation, 2011). Therefore, the problem of education is important to all sectors that need to accelerate the development of the highest benefit in the management of education by placing the learners at the center of development and most importantly.

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Strategic development and management 4.0 is preparing people, building people, innovation, and linking technology access and change (Anansawat, S., 2017). It requires systematic management using education-driven planning to be successful and that can be converted into practice to guide the solution and development of identity change and cultural change that can drive the country towards the first world of Thailand 4.0 Education is the main engine of development, supporting and cultivating ideas and knowledge in the overall civic community of Thailand 4.0 as a key competency factor and long-term potential (Jedaman, P., Buaraphan, K., Yuenyong, C., & et al, 2018). By designing education as the main solution to develop relevance in human and social contexts, the importance of contemporary educational design in the transition from the 20th century to the 21st century has resulted in a trend of change. Impact on social, economic, environmental, cultural, and educational factors such as the "Arab Spring" revolution through the use of technology, the entry into the social economy, including culture, education, management, and political organization (Masintree, K., 2015). Thailand Education Policy Framework 4.0 on Six Quality, 10 Focused on 6 Teacher Quality, and 10 Focused on Spatial and Management Support Practices Leading to Concrete Actions (Office of the Education Council, Ministry of Education, 2017). There are many reasons for promoting a balance of development, being able to manage and developing to be able to manage capacity and to more effectively coordinate.

Background study.

Education and learning systems that need to urgently change and reform to keep up with the 21st-century world include the development of modern people, the development of the quality of new teachers, the quality of educational institutions, the development of new learning resources, as well as the development of modern management. Today's teaching based on the 21st century needs to escalate to a focus on innovative and critical thinking, to produce and build the manpower in line with the direction of the global market and to be competitive, especially the information and communication technology as a result of the advances resulting in the exchange of knowledge as a large-scale network in every corner of the world. The 21st century consists of 3 core skills; (1) Learning and innovation such as critical thinking and problem solving, creativity and innovation development, communication, and teamwork. (2) Digital world awareness including information literacy, media literacy, technology, and information literacy. (3) Life and occupational skills, including flexibility and adaptability, self-leading, social and cross-cultural interactions, productivity and performance, leadership and responsibility. knowledge and skills necessary to prepare students for a happy life in society as teachers play an important role in the preparation, teaching and learning management, promoting and supporting learners to be able to learn by themselves throughout their lives. Through training in learning skills, the integration of digital technology, and the provision of an environment to develop learners with rapid changes. Teachers need to modify teaching methods by designing learning management, media, and innovation in line with the changing global society. Supervision can help the teachers in design learning management. Classroom research is a systematic and sequential study. Various information is gathered in the classroom to find answers and problems in the development of classroom learning management. Applied research is carried out. Action research is aimed at finding knowledge. and apply the knowledge in practice and solve problems in learning management directly (Ministry of Education, 2010). Research is an important tool for teachers to develop their lives to be professional teachers. Participation supervision process was mission necessary for the provision of education that requires cooperation from multiple parties, especially in the development of teaching quality. A developing model it's the process of creating the model to have better properties, there is a principle that shows the factors to related and affecting the factors during the operation to achieve the objective. Specific purposes to development of the participatory integrated supervision process affecting the teachers' competencies as classroom research in learning problem-solving of the schools under Chaiyaphum Primary Education Service Area Office, 3 have to 3th mains this study were followed: (1) Studying the current condition and need assessment of supervision affecting teachers' competencies as classroom research in learning problem-solving. (2) Developing the participatory integrated supervision process affects teachers' competencies

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in classroom research in learning problem-solving. (3) Evaluating the use of the participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving.

Challenges of the participatory integrated supervision process affecting the teachers' competencies in classroom research.

Instructional supervision by Acheson, Keith A., & Meredith, D. (2003), Currently, teaching supervision is one of the strategies and techniques in helping teachers improve and develop to help guide and develop work to be successful promptly as conditions change, and it is also an essential element that supports the process. Teaching under educational standards to a clear systematic work process, as well as methods of quality activities and tools, models, and methods of governance, there are many methods, each with different strengths and weaknesses. The supervision to be developed must be a model that meets the needs and differences of teachers such as knowledge, competence, experience, and motivation.

The professional academic competence of teachers is a problem for the professional learning community in the management of learning is the key to driving the society to acquire the knowledge and skills necessary for life where the ability of Educational personnel are important variable from human development to a learning society, creating balance and stability, as well as building a knowledge-based economy through the process of personnel development, education management, to appropriate academic competence (Thongnueatan, U., 2017). Competency is a very useful organizational management tool for human resource management. In the study department, the concept of competence framework-based human resource development is applied in two areas of core competency and competency. Behaviors arise from the knowledge, skills, abilities, and other attributes that enable individuals to accomplish tasks and achieve organizational success (Office of the Basic Education Commission, 2018). Jedaman, P. (2018) said that empowerment is a personality that enables a person to achieve good performance within certain criteria and perform his or her responsibilities better than others. It is a cognitive performance behavior. Their talent and behavior earned them outstanding results. Wu. J. M. & Lin, C. S. (2011) Competencies refer to teachers' knowledge, skills, abilities, and attributes. With the rapid changes in economic, social, technological, and cross-border information, the changes that occur will inevitably affect education and technological advancement. Change the educational model and the method of acquiring knowledge from the traditional education system with teachers who only transfer knowledge to students to a self-education model that can acquire and build a body of knowledge climb (Anansawat, S., 2017). Effectiveness and quality of educational organization are important elements and goals of educational management to achieve objectives and effectiveness does not refer only to academic achievement or job satisfaction.

Rather, it means to achieve the goals or objectives in educational management according to the ability to produce learners with high learning achievements and the ability to develop learners to have a positive attitude and competence of educational personnel. It is a policy to promote the quality of educational personnel in the entire system. There must be activities to develop quality. There are 2 competencies: core competencies, which focus on good service performance, self-development, teamwork, professional ethics, and work competencies, including courses and learning management. Student Development, Classroom Management, Analysis, Synthesis, and Research for Student Development, Leadership, Building Relationships, and Community Collaboration for Educational Management. Office of the Education Council, Ministry of Education (2017) The recruitment of educational personnel and related agencies to develop and organize teaching and learning processes so that learners can learn and gain knowledge from teaching materials and various scientific sources anytime, anywhere. There is a standard development process. and ethics of the production profession and personnel development to have quality and standards, as well as the development of personnel, both manufacturers and users of technology for quality and efficient education by relying on incentives to support the results of educational personnel. that can produce results effectively.

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Work motivation is the motivation for demand-driven behaviors in response to educational organizational stimuli that produce behaviors at work with a willingness to achieve the desired goals and the outcome of maximum satisfaction. Thongsuk, K (2017) Performance motivation has a great influence on a person's job because humans must be motivated to perform everyday activities. in terms of productivity and quality of work, including personnel background factors, internal and external motivation factors, and support factors of policies and management. Chaiyasut, K., and Authors (2014) found that the factors affecting teachers' competency were motivation and support factors. Motivation factors were measured by job responsibility, job characteristics, career advancement, perception and achievement at work, and professional academic ability of teachers to the community. Professional learning in the design of innovative learning management, because advanced thinking is behavior toward the knowledge, skills, abilities, and other characteristics of each individual who performs and achieves the management of education can be summed up. The principles are as follows: performance focus, good service, self-development, teamwork, professional ethics, course performance and learning management, student development, classroom management, analysis, synthesis, and research for student development. Leading the relationship building and cooperation education management.

Supervision is based on the belief that teachers have different characteristics in terms of knowledge, expertise, learning ability, thinking ability, experience, attitude, ability to see problems and seek alternatives, and different professional development motivations, because, consequently, supervision is imperative in this age of change which has to be modified and developed is important effective education management. Therefore, the implementation of participatory supervision to help improve and develop the quality of education and teaching and learning management of teachers. Therefore, it should be carried out in a way that is consistent and appropriate to the differences in the different areas of the teacher, e.g., development level, abstract thinking, commitment, expertise, and experienced teachers. (Glickman, C. D., 2004) Supervisors must have technical knowledge and competence, and operational skills. Participation supervision to consists of essential and essential basic knowledge, the role of supervision as development, tasks of supervision, unification, and product that is improved students learning. Significant participation supervision to promote the competencies in learning management innovation design as higher-order thinking such as (1) selecting the best and most appropriate supervision method by assessing the level of teacher development, level of expertise, and level of obligation, (2) implementing the chosen supervision method, (3) promoting the development of the teachers by helping with guidance and provides direct guidance to teachers to encourage thinking, expressing opinions and making them more involved in the decision-making process. participation supervision in learning management is the key to enhancing the power of working together as a group (Teamwork).

The model for connecting education management Participation in educational activities in various ways, participation in setting policy and goals in education management, and participation in public relations to support educational activities. (Wagner, T., 2008) Participation supervision is supporting participation in creating knowledge, and understanding for teachers in a learning innovation design of action plans as learning and teaching to the students to develop and improve an environment conducive to learning, prepare educational courses as a result of such involvement, teacher members can collaborate, collaborate and coordinate to work together to achieve common goals in the manner of brainstorming, co-planning, co-operation, co-assessment, and mutual benefit. Participation is, therefore, a matter of accountability, trust and trust, cooperation, and unity in working together to achieve group objectives and coordination. (Oliva, P. F. & Pawlas, G., 2008) Supervising participation in the educational process is a necessary task for educational management that requires cooperation from many parties, especially in the areas of teaching quality improvement, and personnel involved in education management need to develop and improve themselves to keep up with the changes to operate effectively. In addition, instructional supervision by Acheson, Keith A., & Meredith, D. (2003) present that teaching supervision is a strategy and technique that helps teachers improve revision and development intending to help guide and develop work successfully and in time with changing

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conditions. It helps to support the teaching process to be under educational standards to a clear systematic work process, as well as quality activities and tools. (Richey, R. C., Klein, J.D., & Nelson, W.A.,2004). Model and methods of supervision there are many ways, each method has weaknesses and strengths vary. (Silva, Y. D. & Dana, F. N. 2001) Therefore, the type of supervision to be developed must exemplify the needs and differences of teachers such as knowledge, competence, experience, and motivation. Mungchu, A., Jedaman, P., & Teemueangsa, S. (2021) presented a participatory educational model such as collaboration, decision-making, participation and development, joint governance, monitoring, assessment, sharing of responsibility, and building a network to integrate cooperation in education management Smith, William E. (2004) to discussed the concept of the participatory development process to achieve harmonization, consisting of joint problems, common needs, shared interests, and work cooperation of seeking cooperation and encouraging all sectors to participate in a way of co-thinking, co-decision making, collaboration, co-directing, monitoring, and evaluation. In addition, the current supervision requires the introduction of various technologies. come to help support To encourage teachers to have knowledge and understanding of learning management design that promotes higher thinking, through the use of research and knowledge building skills, e.g., by enabling teachers to learn through a learning environment. Known on a constructivist network along with the development of teachers' technological competence. In this regard, participation in supervision in the processes will help to develop reflective skills, and coordination between supervisors and teachers will lead to the development of design management learning for advanced thinking effectively. Panphet, S., & et al (2015) the supervision for the development of learning management competencies in the 21st century, focusing on supervision arising from voluntary teachings of teachers, and introduction of various technologies to support effective, supervision in terms of communication, counseling, the suggestion of learning resources this allows the supervisors to monitor the progress of the instructors regularly and continually. (Wagner, T., 2008) Smith, William E. (2004) the process of working together to improve work by setting goals at the highest level which is the principle according to AIC process to consists of A – Appreciation by raising awareness and appreciation, it motivates the person to find their goals at the highest level which has the effect of helping to empower, whereby the individual will use the initiative/intuition in the ability to self-spiritually to follows the process of A-a as discovery, A-i as diplomacy and A-c as policy. I – Influence from creating something that influences success is the element that helps a person to choose something worthy of continuing to carry his ideas and correlation, where individuals use their thinking and sense abilities to be assessed for different ranks according to the process of I-a as strategic assessment, I-i as negotiation, I-c as strategic. C-Control from the follow-up reflection it is the element that allows an individual to perform a chosen action, by defining the objective-based model as the process that creates the goal of the action and focuses on its own objectives, including reflection on the results of C-a as an audit process, C-i as work agreements, and C-c as implementation. Learning management innovation design as higher-order thinking to effectiveness to educational management is influenced by constructivist learning to generate new knowledge through the interaction and experience of prior knowledge with new information or new experiences, however, teacher learning management.

Therefore, it is only a guide and a learning environment to be created, enabling learners to learn with meaningful, diverse perspectives and answers. (Glickman, C. D.,2004) Participation integrates the supervision process must find effective methods, with a variety of formats to help teachers improve teaching and learning and enhance teaching efficiency. Including the need to take into account the conformity with the changes in the social context, especially, in technology and information to be used to increase work efficiency and in educational management to be able to apply the characteristics of the media as well as the system of conveying the symbols of the media to serve the self-knowledge generation. It is consistent with the learning environment according to constructivism. which is an environment or place that focuses on creating learning, consisting of learners, classrooms, areas where learners take action and work together that support each other a using various tools and learning resources to achieve the goal and task of solving the problem of coordination between methods and

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media by applying constructivist theory as the basis for designing and coordinating with media. The media features and a symbolic system of media that supports the knowledge creation of learners Provide opportunities for learners to interact with a variety of sources of knowledge in a variety of ways with active student participation in the learning process there are 5 important elements and principles in the design, namely problem situations, learning resources, support base, coaching, and collaboration to solve problems. (Chaicharoen, S., 2016) Which is an educational innovation with features that respond to self-knowledge creation It has media features and a media symbol system. used to transmit knowledge in a manner that is hypermedia including animation, graphics, text, and sound, especially if the illustrations are consistent with the content learned. Including a hypertext link that can link each knowledge node on a global network.

Expanding knowledge by pre-arranging concepts and the organization or classification of information or its content as well as the characteristics of communication media that facilitate the process of collaborating on problem-solving in the exchange of perspectives promotes the expansion of the knowledge structure as well. In addition, teachers can also build their own knowledge by the teachers acting through their own thought processes and being able to search for answers in a variety of ways to problem solving during a study with clear goals. The integrated dimension of the educational management quality chain has 3 main focus points 1) “Curriculum development”, “Learning management and knowledge management”, and "Measurement and Evaluation" as a key guideline for improving the quality of education and learners to achieve goals, as a guideline for driving and driving the educational success that is integrated through effective learning activities of research. In the classroom is a systematic and hierarchical study. Various information is gathered in the classroom to find answers and problems to develop learning management. In the classroom, there is applied research and action research aimed at finding knowledge and applying knowledge. Practical benefits and to solve problems in learning management directly (Ministry of Education. 2010). Will be provided teachers with extensive and deep knowledge to work logically and creatively. And the results of classroom research will be an indicator of teacher work success concrete. Challenges of the participatory integrated supervision process affecting the teachers’ competencies in classroom research were the current condition and need for assessment of supervision affecting teachers’ competencies in classroom research in learning problem-solving, the participatory integrated supervision process affecting teachers’ competencies in classroom research in learning problem-solving, and the using of the participatory integrated supervision process affecting teachers’ competencies as classroom research in learning problem-solving.

Research Frameworks

1. Current condition and need assessment of supervision affecting teachers’ competencies as classroom research in learning problem-solving. What's in the comments and how?
2. The participatory integrated supervision process affecting teachers’ competencies in classroom research in learning problem-solving. What should the comments look like?
3. The use of participation integrates the supervision process affecting teachers’ competencies as classroom research in learning problem-solving of classroom research knowledge, teachers’ competencies as classroom research, and satisfaction with the participatory integrated supervision process in the workshop. How are there?

The Methodology

Mixed-method research both the qualitative and quantitative research via participatory action learning throughout on development of the participatory integrated supervision process affecting the teachers’ competencies as classroom research in learning problem-solving in this study.

1. Important Goals:- 1) the current condition and need assessment of supervision affecting teachers’ competencies as classroom research in learning problem-solving to integrated supervision

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from consultation, integrated supervision from monitoring, integrated supervision from self-development, 2) the participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving of creating awareness and appreciation, creating successful influence, creating the direct experience and follow- up the reflection, creating a professional learning community, and CFA to the participatory integrated supervision process, 3) the useing of the participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving of classroom research knowledge, teachers' competencies as classroom research, and satisfaction.

2. Participants:- The participants of 10th schools under Chaiyaphum Primary Education Service Area Office, 3. Key informants were school directors, supervisors, and experts of 17 persons, they all were by purposive sampling, and the sample were school directors and teachers of 113 persons, they all were by multi-stage sampling random.

3. Research Instruments:- Research instruments were to, 1) an interview of the participatory integrated supervision process on structure questionnaire to the item of objective congruence of 1.00, 2) the questionnaires include the current condition and need assessment, factors to the participatory integrated supervision process, and satisfaction to the participatory integrated supervision process on 5 ratting scales to the confidence value of 0.84, 0.86, 0.87, respectively, 3) evaluation questionnaire of teachers' competencies as classroom research on 5 ratting scales to the confidence value of 0.85, 4) the knowledge test on choose 4 answer options to the confidence value of 0.88 to data collections.

4. Collection Method:- Collection methods to divided into 3 phases, 1) the current condition and need assessment of supervision affecting teachers' competencies as classroom research in learning problem-solving to survey by questionnaire with school directors and teachers of 113 persons, 2) the participatory integrated supervision process came from the documentary study, participatory action learning, and interview of the participatory integrated supervision process with school directors, supervisors, and experts of 17 persons, and factors to The participatory integrated supervision process to survey by questionnaire with school directors and teachers of 113 persons, 3) the use of The participatory integrated supervision process from workshops to the enhancement of teachers' competencies as classroom research by knowledge test, competency evaluation, satisfaction questionnaire with the teachers to attend on the training of 113 persons.

5. Inquiries Method:- Inquiries method on qualitative data to analyzed by using three main stages, i.e., data reduction, data organization, and data interpretation to a conclusion. Quantitative data to be analyzed by descriptive statistical analysis including percentage, mean and standard deviation, $PNI_{Modified}$, t-test, and relationship (r), also, the Confirmatory Factor Analysis (CFA) was conducted to analyze the participatory integrated supervision process by computer.

Research Results

The study revealed that the development of The participatory integrated supervision process affects the teachers' competencies in classroom research in learning problem solving of the schools under Chaiyaphum Primary Education Service Area Office, 3 on research results were as followed:

1. Results to the current condition and need assessment of supervision affecting teachers' competencies as classroom research in learning problem-solving.

The current condition and need assessment of supervision affecting teachers' competencies as classroom research in learning problem-solving on 3 aspects were integrated supervision from consultation, integrated supervision from monitoring, and integrated supervision from self-development shown in table 1.

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Table 1. Mean, standard deviation, levels to current conditions and needs assessment, PNI $_{Modified}$

Current conditions and needs assessment	Current conditions levels		Meaning	Needs assessment levels		Meaning	PNI $_{Modified}$
	Mean	S.D.		Mean	S.D.		
1. Integrated supervision from the consultation.	3.41	0.70	Middle	4.40	0.44	High	0.35
2. Integrated supervision from monitoring.	3.37	0.71	Middle	4.55	0.90	Most	0.44
3. Integrated supervision from self-development	3.42	0.69	Middle	4.58	0.48	Most	0.46
Totals	**3.40**	**0.70**	**Middle**	**4.51**	**0.54**	**Most**	

On table 1. The current condition of supervision affects teachers' competencies in classroom research in learning problem-solving in 3 aspects was integrated supervision from consultation, integrated supervision from monitoring, and integrated supervision from self-development at the level of middle levels (Mean of 3.40, S.D. of 0.70), the needs assessment at levels of most levels (Mean of 4.51, S.D. of 0.54). When prioritizing the highest needs were integrated supervision from self-development (PNI $_{Modified}$ of 0.46), integrated supervision from monitoring (PNI $_{Modified}$ of 0.44), and integrated supervision from the consultation (PNI $_{Modified}$ of 0.35), respectively.

2. Results of the participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving.

2.1 The participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving of the factors and indicators are shown in table 2.

Table 2. Factors and indicators to the participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving.

Factors	Indicators
1. Creating Awareness and Appreciation	1.1 Brainstorming about teaching and learning management of classroom research in learning problem-solving. 1.2 Connect and create interactions in setting goals and driving directions for the success of classroom research in learning problem-solving. 1.3 Jointly driven according to the learning management as policy filtering of the implementation into the goals set of classroom research in learning problem-solving.
2. Creating Successful Influence	2.1 Co-direction according to the goals set to achieve the goals and missions of the educational institutions of classroom research in learning problem-solving. 2.2. Sharing of opinions crystallizes in the same and coherent direction of building a common vision of classroom research in learning problem-solving. 2.3 Eliminating the disadvantages to be the strengths of the educational institutions of classroom research in learning problem-solving.
3. Creating Direct Experience and Follow-up the Reflection	3.1 Adopting the concept of competency of classroom research in learning problem-solving.

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Factors	Indicators
	3.2 Supporting the formation of knowledge and understanding of implementing activities of classroom research in learning problem-solving.
4. Creating Professional Learning Community	4.1 Empowerment of teachers who are leaders of teamwork together in classroom research in learning problem-solving. 4.2 Creating a culture of initiative and innovation from the promotion to each other in the research and development of classroom research in learning problem-solving.

Table 2. The participatory integrated supervision process affects teachers' competencies as classroom research in learning problem-solving of 4 factors include creating awareness and appreciation, creating successful influence, creating a direct experience and follow- up the reflection, creating a professional learning community to 10th indicators.

2.2 CFA. was conducted to associate with the participatory integrated supervision process into 10 indicators to shown in figure 1. Symbols:

Variables	Symbols
The participatory integrated supervision process.	SUFF1
Brainstorming about teaching and learning management of classroom research in learning problem-solving.	S1
Connect and create interactions in setting goals and driving directions for the success of classroom research in learning problem-solving.	S2
Jointly driven according to the learning management as policy filtering of the implementation into the goals set of classroom research in learning problem-solving.	S3
Co-direction according to the goals set to achieve the goals and missions of the educational institutions of classroom research in learning problem-solving.	S4
Sharing of opinions crystallizes in the same and coherent direction of building a common vision of classroom research in learning problem-solving.	S5
Eliminating the disadvantages is the strength of the educational institutions of classroom research in learning problem-solving.	S6
Adopting the concept of competency of classroom research in learning problem-solving.	S7
Controlling, monitoring, supervising, and guidance of the teachers in the implementation of the goals set in classroom research in learning problem-solving.	S8
Empowerment of teachers who are leaders of teamwork together of classroom research in learning problem-solving.	S9
Creating a culture of initiative and innovation from the promotion to each other in the research and development of classroom research in learning problem-solving.	S10

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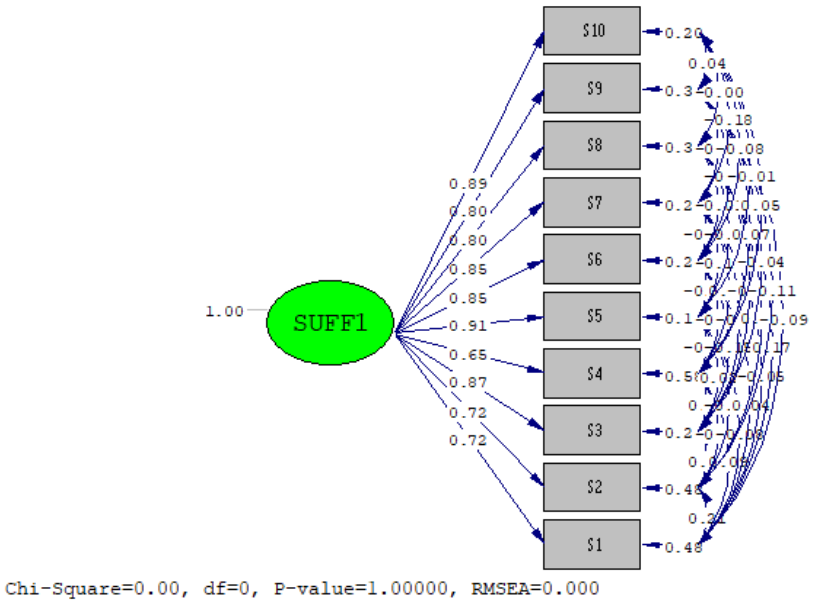

Figure 1: CFA to associated with the participatory integrated supervision process in 10 indicators.

On figure 1. CFA. to associated with the participatory integrated supervision process into 10th indicators was significant at levels of 0.01.

3. Results to use of the participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving.

The use of the participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving of classroom research knowledge, teachers' competencies as classroom research, the relationship between classroom research knowledge with teachers' competencies, and satisfaction were followed:

3.1 Classroom research knowledge from the comparison between the scores before training with the scores after training to shown in table 3.

Table 3. Mean and standard deviation of the scores between the scores before training with the scores after training, and t-test.

Classroom research knowledge	Scores		Percentages	t	Sig.
	Mean	S.D.			
Before training	26.67	2.08	66.67	16.47**	.01
After training	35.21	1.36	88.02		

*** significant l of 0.01.*

In table 3. Classroom research knowledge from the comparison between the scores before training with the scores after training, by the teachers in the scores after training to higher than before training was significantly different at a level of 0.01.

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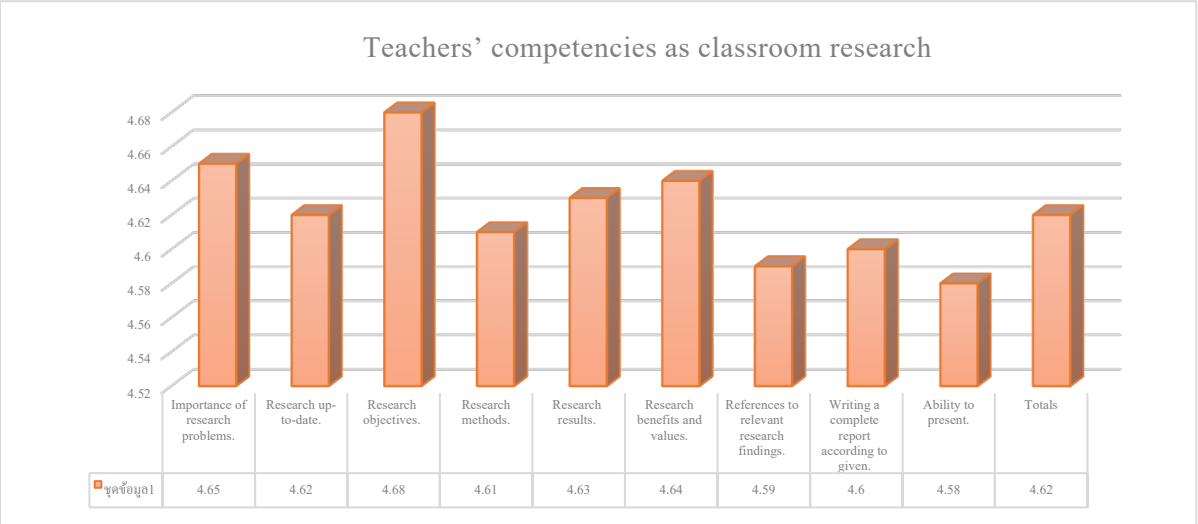
3.2 Teachers' competencies in classroom research to shown in table 4.

Table 4. Mean and standard deviation, and quality levels.

Teachers' competencies in classroom research	Quality levels		Meaning
	Mean	S.D.	
Importance of research problems.	4. 65	0.35	Excellent
Research up-to-date.	4.62	0.38	Excellent
Research objectives.	4.68	0.32	Excellent
Research methods.	4.61	0.38	Excellent
Research results.	4.63	0.37	Excellent
Research benefits and values.	4.64	0.37	Excellent
References to relevant research findings.	4.59	0.41	Excellent
Writing a complete report according to the given.	4.60	0.40	Excellent
Ability to present.	4.58	0.41	Excellent
Totals	**4.62**	**0.38**	**Excellent**



In table 4. Teachers' competencies in classroom research include the importance of research problems, research up-to-date, research objectives, research methods, research results, research benefits and values, references to relevant research findings, writing a complete report according to given, the ability to present at the quality level of excellent levels (Mean of 4.62, S.D. of 0.38), considering each side with the highest mean, in descending order (1-3) were research objectives (Mean of 4.68, S.D. of 0.32), importance of research problems (Mean of 4.65, S.D. of 0.35), research benefits and values (Mean of 4.64, S.D. of 0.37), respectively.

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3.4 Relationship between classroom research knowledge with teachers' competencies to shown in table 5.

Table 5. Relationship between classroom research knowledge with teachers' competencies.

Participation integrate supervision process	Relation (r)	
	Classroom research knowledge	Teachers' competencies
Classroom research knowledge	-	0.82**
Teachers' competencies	0.82**	-

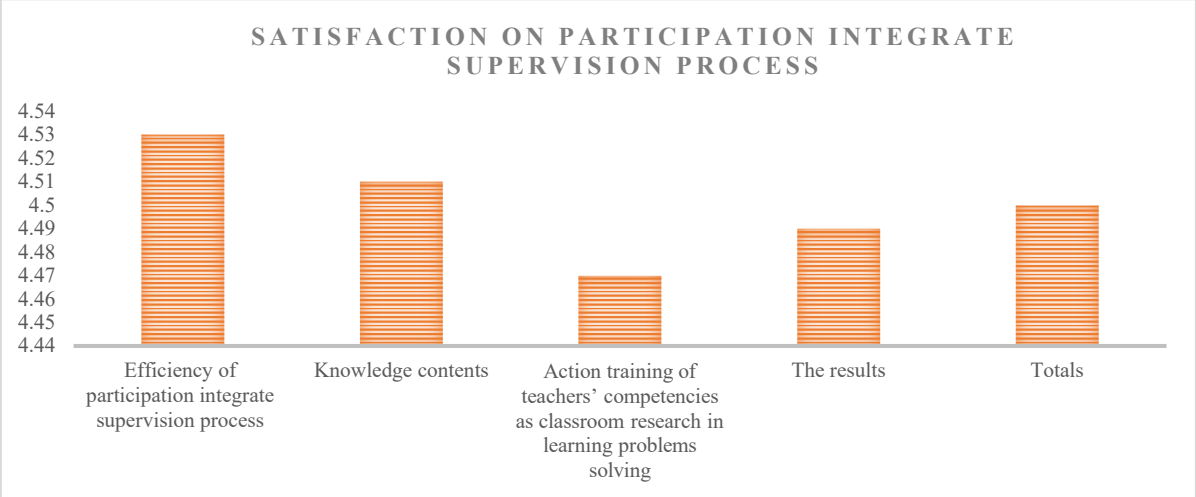
**P<.01

In table 5. The relationship between classroom research knowledge with teachers' competencies by the participatory integrated supervision process to positive relationship was significant at levels of 0.01.

5) Satisfaction with the participatory integrated supervision process to shown in table 6.

Table 6. Mean and standard deviation, and satisfaction levels.

Satisfaction with the participatory integrated supervision process	levels		Meaning
	Mean	S.D.	
The efficiency of the participatory integrated supervision process	4.53	0.47	Most
Knowledge contents	4.51	0.49	Most
Action training of teachers' competencies as classroom research in learning problem-solving	4.47	0.53	High
Results	4.49	0.51	High
Totals	**4.50**	**0.50**	**High**



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In table 6. Satisfaction with the participatory integrated supervision process into the efficiency of the participatory integrated supervision process, knowledge contents, action training of teachers' competencies as classroom research in learning problem-solving, the results at the level of high levels (Mean of 4.50, S.D. of 0.50), a considering each side with the highest mean, in descending order (1-3) to the efficiency of the participatory integrated supervision process (Mean of 4.53, S.D. of 0.47), knowledge contents (Mean of 4.51, S.D. of 0.49), the results (Mean of 4.49, S.D. of 0.51), respectively.

Discussion

The participatory integrated supervision process affects the teachers' competencies as classroom research in learning problem-solving into need assessment of supervision affects teachers' competencies by the highest needs. The participatory integrated supervision process of 4th key factors include creating awareness and appreciation, creating successful influence, creating a direct experience and follow-up the reflection, creating a professional learning community affecting the teachers' competencies as classroom research in learning problem-solving, CFA to associated with the participatory integrated supervision process were significant at levels of 0.01. Teachers to higher scores after training, teachers' competencies of excellent levels, relationship between knowledge with competencies to positive relationship, and satisfaction on the participatory integrated supervision process of high levels. Because the participatory integrated supervision process for creating awareness and appreciation on the brainstorming about teaching and learning management of classroom research in learning problem-solving that uses a new perspective to develop learning management competencies to keep up with the changes, and in line with the dynamics under the 21st century including the analysis of common problems together, shaping the vision of the future and creating a common vision. Also, the connect and create interactions in setting goals and driving directions for the success of classroom research in learning problem-solving, both imagining success images, and crystallizing success images in the same direction include jointly driven according to the learning management as policy filtering of the implementation into the goals set of classroom research in learning problem-solving, and in the same direction in the implementation of various activities in a step-by-step manner which consists of contributing ideas, sharing reviews, and sharing suggestions of comprehensive operations. to accordant with Smith, William E. (2004) to discuss the concept of the participatory development process to achieve harmonization, consisting of joint problems, common needs, shared interests, and work cooperation of seeking cooperation, encouraging all sectors to participate in a way of co-thinking, co-decision making, collaboration, co-directing, monitoring, and evaluation. Mungchu, A., Jedaman, P., & Teemueangsa, S. (2021) to a summary of educational management for sustainability the quality improving education into involvement as the collaborative, decision making, participation and development, joint supervision, monitoring, evaluation, responsibility sharing and networking to cooperation integration in educational management. Creating successful influence of co-direction according to the goals set to achieve the goals and missions of the educational institutions to operate in a unity and efficient manner, aiming towards the goal is in the same direction through which stakeholders at all levels participate in the initiatives to create and develop learning management for learners to be progressive, effective and effective that places the learner at the center of development into opportunities for action to achieve success through analysis, identification and classification as the priority towards a common vision, sharing of opinions crystallizes in the same and coherent direction of building a common vision, and coordinating how to achieve the objectives and strategies both objectives. (Glickman, C. D., 2004) Strategies must be prioritized to discriminate on high-priority matters, practical strategy, both a strategy based on an influence plan for success and a strategy that adapts to changing circumstances, taking into account both the internal and external elements to choose a method for utilizing external opportunities and points to solid that the academy has to transform external limitations and threats into opportunities and consistent in the same direction throughout the school according to various circumstances to lead a variety of real-world assessments, setting aspirational future goals for teachers to achieve the design competence of innovative higher-order

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cognitive learning innovations into promoted the competencies in learning management innovation design as higher-order thinking of the teachers as competency base towards creating the direct experience of adopting the concept of competency. Harinwan, U., & et al. (2014) found that Information technology competence in education for teachers is a fundamental aspect of teachers contributing to the success of learning management. To enhance the knowledge and skills necessary for competence according to professional standards Build the desired competencies through self-improvement through joint training courses. by designing according to the principles of the knowledge training process It is a learning method that fosters an effective learning environment and self-improvement through expert coaching. and during training/development as coaching Support building knowledge and understanding of activities Support and encourage teachers to apply experiences gained from training and knowledge development to practical applications and learning management. according to the concept of the ability of teaching professionals cognitive constructivism social constructivism Principles of real-world learning knowledge management principles open learning principles and media design principles It consists of modules such as problem situations. learning resources Exchange of knowledge, promote abilities, intellectual tools, experts, scaffolding. Alisla, S. (2015) Supervision supports overall teacher leadership because its effect is part of supporting teachers in their work to increase teacher competence, help teachers assess performance, and support teachers' work. Collaborate in schools and develop approaches to community collaboration and teacher professional development, building professional learning communities to empower teachers, and teamwork leaders together in classroom research to solve learning problems. The knowledge that emphasizes learning for self-development to professional development under the structure of professional power and moral power from collaborative thinking, co-leading, and co-led development by school administrators and experts to become a school of learning. Knowledge and professional learning community throughout the process of exchanging knowledge, critique, sharing visions, collaborating, and combining teamwork of classroom research in solving learning problems, organizational leadership, and culture is the focus and fostering of the learning process. Know holistically with a powerful framework and brainstorming to create innovative design crystals, advanced cognitive learning management, and quick response fast. Silva, Y. D. & Dana, F. N. (2001) The development of the supervision system to improve the quality of teaching and learning management of teachers leads to the formulation of methods and procedures for supervision to participate in the integration of the supervision process in enhancing the research ability to identify teachers as well. Appropriate supervision techniques according to the level of knowledge, skills, and competence of teaching and classroom action research, providing information and providing teachers with the necessary knowledge and skills before the supervision process begins. Pre-meeting and post-meeting observations and assessments of the processes and outcomes of applying different supervisory models go hand in hand with continued coaching and monitoring, and teachers must be committed and sincere. in self-development, development of learning management, willingness to cooperate and take responsibility for work, as well as having good interpersonal skills. Dick, W., & Carey, L. (2010) The supervision process with the target groups will gain good cooperation from all relevant sectors through discussions, and exchanges of opinions, including teachers who are encouraged to help teachers organize quality teaching activities. (Prasittisilpachai, N., 2012) A developing an integrated model between teacher professional development and participatory supervision throughout the process of exchanging knowledge, criticism, shared vision, and collaboration. Oliva, P. F., and Pawlas, G. (2008) inclusion of teamwork, leadership, and corporate culture are to focus on and promotes a holistic learning process with an effective framework by supervision. Stoehr, J., Banks, M., & Allen, L. (2011) the PLCs, DI, & RTI: A Tapestry for school change of action and brainstorming to crystallize innovative design, advanced cognitive learning management. Creating a culture of initiative and innovation from the promotion to each other in the research and development of classroom research in learning problem-solving to the innovation of knowledge creation, teaching design that is suitable for the environment, and the search for the best learning method, namely, joint review of the work into the competencies in learning management innovation design as higher-order thinking, innovation performance evaluation,

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achievement incentive awards and disseminating the work together. Professional Learning Community and Educational Management or Professional Learning Community: PLC is a gathering of cooperation and learning together of teachers, administrators, and educators to exchange to reflect results in learning improvements. Teaching enables teachers to practice teaching better and students with higher quality, and higher academic achievement (Chansirisira, P., 2021). Therefore, it is important to operate a student support system through a professional learning community. The teacher who is a practitioner has brought this concept of education in real-life outside the classroom to the classroom to develop a better-quality care system for students (Phiturongkapitak, C., 2022).

Recommendation

The participatory integrated supervision process affecting teachers' competencies as classroom research in learning problem-solving were to, (1) creating awareness and appreciation of brainstorming about teaching and learning management of classroom research in learning problem-solving , shaping the vision of the future and creating a common vision, connect and create interactions in setting goals and driving directions for success of classroom research in learning problem-solving , jointly driven according the learning management as policy filtering of the implementation into the goals set of classroom research in learning problem-solving , (2) creating successful influence of co-direction according to the goals set in order to achieve the goals and missions of the educational institutions of classroom research in learning problem-solving to operate in a unity and efficient manner, sharing of opinions crystallizes in the same and coherent direction of building a common vision of classroom research in learning problem-solving , eliminating the disadvantages to be the strengths of the educational institutions of classroom research in learning problem-solving , (3) creating direct experience and follow- up the reflection of adopting the concept of competency of classroom research in learning problem-solving , a fundamental teacher characteristic that is contributing to the success of learning management, Supporting the formation of knowledge and understanding of implementing activities of classroom research in learning problem-solving , supporting and encouraging teachers to apply the experience gained from training and development, (4) creating professional learning community of empowerment of teachers who are leaders of teamwork together of classroom research in learning problem-solving to focus on learning for self-improvement, creating a culture of initiative and innovation from the promotion to each other in the research and development of classroom research in learning problem-solving to innovation of knowledge creation and teaching design. CFA. to associated with the participatory integrated supervision process. Classroom research knowledge from the comparison between the scores before training with the scores after training, by the teachers. Teachers' competencies in classroom research include the importance of research problems, research up-to-date, research objectives, research methods, research results, research benefits and values, references to relevant research findings, writing a complete report, efficiency of the participatory integrated supervision process, knowledge contents, action training of teachers' competencies as classroom research in learning problem-solving. The participatory integrated supervision process supports the learning management to effectiveness.

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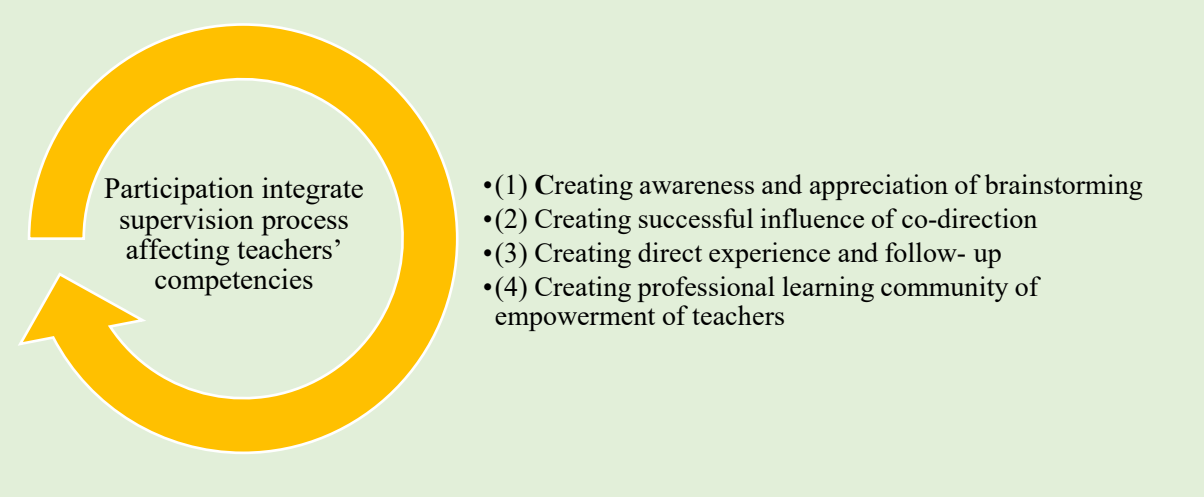

Figure 2: The participatory integrated supervision process affecting teachers' competencies

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