

The Development of Teacher Competencies in the 21st Century with a PLC in the Island

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Abstract

This research objective 1) To create innovation in cooperation with IPST. Upgrading the Quality of Education and Youth Learning to be Innovative 2) To develop 21st century teacher competencies in language, science, math and technology learning management with the Professional Learning Community (PLC) to reduce Inequality 3) to prepare youth To have lifelong lifestyles and essential skills necessary for lifelong learning Ready to join the International Student Assessment Program in the year 2021 (PISA 2021) in the island area, Satun province. The population determined the number of schools in the island area of Satun Province, all 11 schools. Select a specific model that teachers of Science, Mathematics and Technology (SMT) subject group (according to the funders agreement), with the sample group being the three subject teachers, totaling 33 people. Performance; Get LMS: Learning Management Systems developed on Schoology.com for innovation in the development of science teacher profession. Mathematics and technology through Professional Learning Community (PLC) processes to science and math teachers Teachers can use the LMS to improve the quality of education and learning outcomes of science and mathematics of students. And after training to use the said innovation Found that teachers were very satisfied 3) Results of the development of teacher competencies in the 21st century in language learning management Science, Mathematics and Technology with a Professional Learning Community (PLC) to reduce inequality of youth to live a way of life according to the Sufficiency Economy Philosophy in Satun Island, found that the overall picture of teacher competency development to reduce inequality of youth to Have a way of life according to the philosophy of sufficiency economy Teachers had a high level of competencies in science and mathematics teaching and learning, with an index of the ability to improve learning management of teachers on the island found that teachers had the most required competencies. 3) The results of monitoring the development of teacher competency in each context of the island school. In the context of classrooms, teachers, learning materials, learners, teaching methods, learning resources, sufficiency economy.

Index Terms— Teacher competencies, the 21st century, Professional Learning Community, sufficiency economy

Introduction

THE Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn Siam Boromrajakumari Tantivejkul [1] "He cares about schools in the island area to receive physical support. others [2]. Human resource development The development of students equally. Dorbut [3] Thaksin University together with the Institute for the Promotion of Teaching Science and Technology (IPST) Payutto) [4] to develop teachers in the area to be ready to become a modern teacher in the 21st century with a focus on developing the ability to manage learning in science and mathematics. Computational Science and Digital Learning This includes promoting knowledge and understanding of learning measurement and evaluation in accordance with the guidelines of the Program for International Student

Panich. [5]. Assessment (PISA) to prepare teachers and students for the PISA test. Teaching Internet signal system The availability of various equipment of satellite distance education can be used for effective learning.

And finding ways to promote additional career that suit the context of the area Which some islands will have a lot of tourists So the idea was to recruit volunteers to teach English. For students on the island.

Developing teacher competencies in the 21st century with professional learning communities

[6] Suraphon Tham Romdee [6].

To reduce disparity of youth to have a way of life according to the philosophy of sufficiency economy in Satun Island area to reduce the gap in Thai education inequality through cooperation of people in society with the same aim to transform Thai education Let human resources grow together Build quality of life and quality of Thai children nationwide. To achieve the quality of a good society that will continue in the future. The island school refers to the school located in an island surrounded by water. From the land all year round or travel by boat only all over the country There are a total of 124 primary and secondary schools. Researchers are interested in researching specific island areas in Satun Province. Because wanting to develop education to reduce inequality And create innovation areas to help create models for use in other provinces with similar island areas.

Related theories and literature educational innovation area Established for the following purposes Cahill [7].

- (1) To innovate and develop educational and learning innovations to enhance the educational achievement of learners. Including to carry out expansion to be used in other basic educational institutions
- (2) Reduce disparity in education
- (3) Decentralize and give autonomy to educational agencies and pilot schools in the educational innovation area in order to increase the flexibility of education administration and management for more quality and efficiency.
- (4) Build and develop a mechanism for joint educational management between the public sector. Local government, private sector and civil society in the educational innovation area

Senge [8]. The reason for the promulgation of this Act is that it is expedient to develop the provision of basic education, which is the cornerstone of the development of quality Thai people. Have the ability to communicate able to live and work with different people knowledge

able in the world and have the skills to work for the skills of each learner and for the state, local government, private sector and civil society Senge, et al. [9]. Together to truly improve the quality and efficiency and reduce the inequality in the provision of basic education. It should be established that an educational innovation area, which is an educational administration and management reform area, should be established to support the creation of educational innovation which is a pilot in the decentralization and freedom of education agencies and basic educational institutions. To improve quality and efficiency and reduce inequality in addition, innovation in teaching and learning management and good practice has been expanded to be used in educational institutions.

Innovation Area with Professional Learning Community (PLC)

Modern time's students with various and different abilities According to the National Education Act 1999 and its amendments (No. 2), BE 2545, Section 10 states that the provision of education must provide persons with equal rights and opportunities to receive at least no less basic education. Twelve years the state must provide it thoroughly and qualitatively. Without charge providing education for persons with physical, mental, intellectual, emotional, social, communication and learning disabilities or with physical disabilities or disability or a person who is unable to rely on himself or has no caretaker or disadvantaged Such persons must provide special rights and opportunities for basic education. Education for people with disabilities in the second paragraph Make arrangements from birth or experience disability free of charge and that such person is entitled to any other educational assistance. In addition, Section 22 states that the principles of education management. All learners can learn and develop themselves. Must provide education that develops learners naturally and to their full potential It is imperative that all teachers are to seek methods that will enable all students to learn in the spirit of the Act. The new innovation that teachers must know is the Professional Learning Community (PLC), where PLC stands for Professional Learning Community, which means Community of Practice (CoP) to perform teacher duties. It is a gathering together to work to develop skills and learning to perform the duties of teachers for disciples by gathering together and exchanging learning (Lor Por Ror.) From direct experience. Makes acting as a teacher for students to work as a group or as a team. Which could be a team in the same school Different schools can be or it may be further away from each other through ICT. Strategies for Managing and Sustainable Use of Professional Learning Communities (PLCs) Stoehr, et al. [10].

1. Start with simple steps (Take a baby steps). Begin by setting goals, discussing, reflecting on, exchanging with others. To determine How to proceed by considering and reflecting on the following points

1.1 What principles will motivate them to practice?

1.2 How do we start new knowledge?

1.3 How should it be designed to verify evidence of critical learning?

2. Plan Cooperatively. All members of the group can jointly determine the information needed for their operations.

3. Set high expectations and analyze teaching and find ways to achieve the best results.

3.1 Tests for teaching-related agreements after a long-term prototype has been prepared.

3.2 Provide a time for guidance with emphasis on using it in the classroom

3.3 Make time for teachers who have difficulty observing their classroom practices that create a successful learning environment.

4. Starting from a small point (Start small), starting from using a small group first and then expanding

5. Study and use the data, examine implementation results and reflections to determine which plans should be used next / which plans should be improved or canceled.

6. Plan for success (Plan for success) Learn from the past. Improve or reject things that are unsuccessful and keep doing future success or failure depends on the attitude and behavior of the teacher.

7. Go public. Any successful and quality plan should be published as a guide to others. It is also an important opportunity for others to participate in the exchange of ideas in order to achieve the work creatively.

8. Train the body and nourish the brain (Exercise the body & nourish the brain) Organize activities that can move and develop the ability to think critically. This will encourage teachers for working with quality and achieving their goals and healthy food and beverages should be provided for teachers because it is very necessary for daily energy consumption.

Next, we will discuss techniques used to create Professional Learning Communities (PLCs) that can be used as a guideline for building a learning exchange within a participatory group. Teachers are important people who will help support, encourage, facilitate and design learning activities for learners so that learners have the competencies or potentials necessary for living in the 21st century Students are able to fully demonstrate their potential. Moreover, good teachers must possess the qualities and competencies necessary in the 21st century to apply their own knowledge, skills and attitudes to develop learners to be knowledgeable, skilled, and have a good attitude too. Students will be ready for a career and live happily in the future.

Important skills in the 21st century are the 3R, which consists of (R) Reading (W) Writing and (A) Arithmetic.

1. Development of teacher competency in the 21st century with a professional learning community to be science, mathematics and technology with a professional learning community to reduce disparity of youth to live in accordance with the sufficiency economy philosophy in the island area of Satun Province

2. Make innovation with IPST in driving and pushing enhancing the quality of education and youth learning to be innovators according to the philosophy of sufficiency economy, island area of Satun Province

3. Prepare youth to have a way of life and essential skills necessary for life long learning ready participated in the International student assessment project in 2021 (PISA2021) in the island area of Satun Province.

3 Methods

Fiscal year 2020, start the project 1 October 2019 - 30 September 2020

Phase 1 Development of teacher competency in the 21st century with a professional learning community to apply in the management of language learning, science, mathematics and technology. With a professional learning community

1. The study of principles, concepts, theories and research work related to systematic knowledge-building process supporting the management of spatial education. To reduce inequality and create sustainable social equality The researcher conducted the study by analyzing content (Content Analysis) on issues related to 1) information system 2) participation mechanism of the provincial area 3) the school had freedom and flexibility in self-management 4) quality of Personnel 5) Efficiency, value, quality, participation and mobility

2. Meeting to clarify with the school administrators and teachers of each school. To understand the common goal of driving the body of knowledge in support of the management of spatial education. To reduce inequality and create sustainable social equality In the area of the island, there are 11 schools, a total of 33 people.

Phase 2 provides innovations in science, mathematics and technology, research teams from the Faculty of Education, Faculty of Speakers, together with IPST. Enhancing the quality of education and learning of youth to be innovators according to the sufficiency economy philosophy, the island area of Satun Province is as follows

1. Organize a meeting and seminar between schools to create a body of knowledge on a support system for the management of space education to reduce inequality and create sustainable social equality in the island area: 11 schools, a total of 33 people.

2. Jointly set goals and lay out guidelines for developing and enhancing the quality of education together. By organizing a seminar Network partners gather ideas to analyze their own potential and formulate an action plan for improving the quality of education. By offering requirements And comments from external network parties About the possibility of supporting the school, a knowledge-based system, to support the management of spatial education To reduce inequality and create sustainable social equality

3. Workshop for academic strengthening of personnel of 11 small schools in the circle of Professional Learning Community (PLC) process.

4. The network partners jointly prepare to support the implementation of the inter-school network action plan and reflect on the performance for the preparation. Readiness for further operations By holding a meeting of approximately 33 people

5. Creating a research operation in LMS: Learning Management Systems developed on Schoology.com for use in the model trial process in real-world situations.

4 Population And Sample

Population

The researcher population has studied the data obtained from To do this research Target

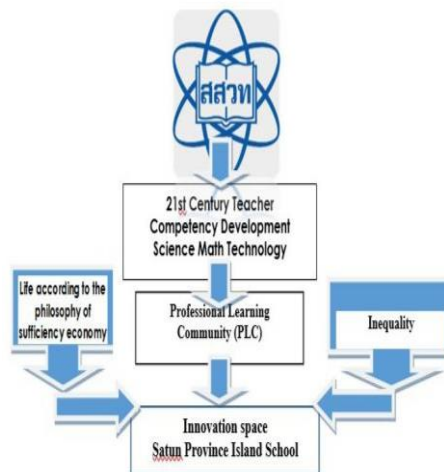


Figure 1. Picture conceptual frame work

groups of 11 schools in the island area, Satun province by specifying the sample group by specific method 11 school administrators, total 33 teachers.

Sample

To determine the number of schools in the island area of Satun Province, a total of 11 schools, select a specific type that the teachers teach the Science, Mathematics and Technology (SMT) subject groups (according to the funders agreement), with the sample group being the three subject group teachers. 33 people

5 Research Instruments

Quality research tools With a method for determining the content validity From 5 experts and try out and find the confidence of the tool. The sample group will use the program to exchange learning in the LMS system. This information can only be accessed by the sample teachers and in the island area, Satun Province, with an expert designation of content validity

6 Expected Results

1. Teachers develop competencies in the 21st century with a professional learning community organized learning processes that emphasize competencies in science, mathematics, language and technology.

2. Reducing the inequality of teachers and youth to have a lifestyle according to the sufficiency economy philosophy and the development of science, mathematics, language and technology.

7 Results and Discussion

Satisfaction towards the development of teacher competencies in the 21st century with a professional learning community in the island area of Satun, In the overall and every factors are at the high level.

RESULTS Gender age position duty Degree experience 2 a total of 6 people together. The teachers therefore have to divide the learning management in 1 classroom into 2 levels class therefore makes teaching and learning not effective as expected.

A = Project service procedures

B= Lecturer

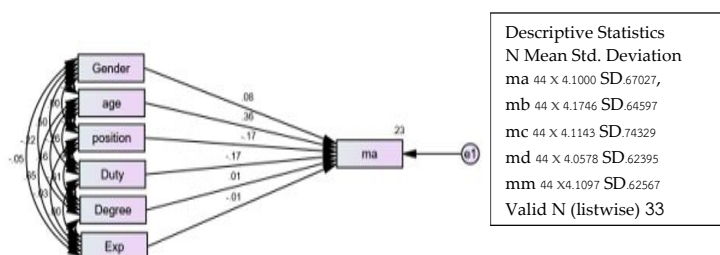
C= Facilitation

D= Quality of training service

E= Execution level

List	Mean	S.D.
Project service procedures	4.1000	.67027
Lecturer	4.1746	.64597
Facilitation	4.1143	.74329
Quality of training service	4.0578	.62395
Overall	4.1097	.62567

P= Problem level



The result of field trips

The context of the classroom

1. State of the learning environment, Classroom conditions are conducive to teaching and learning management. The device is ready, interesting. The classroom is beautiful, clean, well ventilated.

2. Teachers, The teachers are willing to prepare to teach very well. Prepare materials for teaching and learning that are interesting. Atiwitayaporn and Vehachart [11] By bringing pictures of tourist attractions in the province and nearby schools Used as a medium for teaching and learning Make learners have a better understanding of the subject matter. But teachers should add in the use of modern technology media in teaching and learning more. To develop oneself to keep pace with the changes in technology and the application of new knowledge in the management of teaching and learning to keep up with the events and motivates students to want to learn and more interested in the subject matter Teachers should encourage learners to have more open-world learning. Open up knowledge and ideas and encourage students to take action. Teachers should integrate various sciences such as science, mathematics, language, technology into teaching and learning management. So that students can apply knowledge in the classroom to use in their daily life. Rungchatchadaporn Vehachart [12].

3. Learning materials

The learning materials are interesting. In bringing a picture of the net for tourism in the province and around the school used as teaching materials most media are presentations in color images on paper. Vehachart, et al. [13] Did not invent new media for use in teaching, not much variety causing the interest of the students to decrease Teachers should use technology materials to be used in teaching and learning to motivate the learners to become more interested.

4. Learners

Because the number of students in each class is small the school therefore organizes learning and teaching by combining the classes of Grade 1, a total of 3 people and Grade

5. Teaching methods

The teachers are very well prepared to teach in advance. But should add a variety of activities to encourage learners to learn through answering questions. Should organize activities that allow learners to take action. In real place to stimulate students to have an urge to study and to encourage students to learn more

6. Sufficiency Economy Learning Resources

The only 4 school has an external learning center, which is a community learning center in the study of coastal fishing lifestyles and learning resources within the school the school has the following sufficiency economy projects: agricultural for lunch, laying hens, catfish raising in cement ponds. Raise a precinct to collect nectar Mixed farmland Organic vegetable plots and there is a learning center to use electricity using solar cells for students in which the school produces electricity for itself within the school

7. Condition of problems found

With the school condition located on the island area Causing communication problems Since the Internet signal is not conducive to work or using the media in teaching and learning and with the environment around the school being an area of mangrove forest interspersed with community forest as a result, wild animals such as monkeys interfere in teaching. And destroy device media Including satellite dishes Causing problems in accessing the Internet system

Conclusion

Quantitative

1. 5 speakers from Thaksin University, the Director and Deputy Director, 4 persons, Satun Primary Educational Service Area Office, total 9 people.
2. Training: There are 11 schools in the training network (island area, Satun province).
3. Teachers and network school administrators participating in the training, total 44 people (4 administrators and school teachers each (11 science, math and technology) teachers

Qualitative

1. There is a strong academic cooperation network between IPST, universities and schools in the network.
2. Teachers and students in the schools participating in the activities gain knowledge, understanding of the PISA exam.
3. There were 11 volumes of research work in teachers' classrooms, where teachers used teaching materials and learning management plans of IPST to raise the level of PISA achievement.

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