



The model of integrated learning management to develop learning in the 21st century for students of Northeast Sports School

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Abstract

This paper aimed to study and develop 21st century learning of sport students in the Northeast of Thailand. Integrated learning management model was created and verified through research and development design. The findings revealed that the integrated learning management model for developing 21st century learning acquired along the open system approach for administration with the unitary integration of factors, namely, factors to facilitate the success 1) Inputs which included desirable characteristics of learners in 21st century, teacher's leadership, curriculum, media and technology, and education quality management and assessment, 2) Process including step 1- creating knowledge framework, step 2 - putting into practice, step 3 - outcome assessment, 3) Output - the success along the factors, and 4) Feedback - the reflection on problems and recommendations for operating in each step. The integrated learning management model for developing 21st century learning concerned individuals had satisfaction with it at most levels.

Keywords: integrated learning, sport student, sport school, learning skills integrated learning

Article history: Received 21 April 2020, Revised 1 July 2020, Accepted 13 July 2020

1. Introduction

The knowledge-based economy and society have a deep root in producing and selling knowledge for creating intellectual innovation turning the tide on education. The world has increasingly demanded humans with high capacity, creativity, academic excellence, and life-maintaining skills. Thailand has rushed out the education reform to get ready for declaring the 11th National Economic and Social Development Plan to set up the strategy for developing people towards learning society all over their life in a sustainable way and creating their immunity for the change. The process is via developing curriculum and adjusting the instruction organizing process to facilitate the learner development holistically to enable the new era of children to know along with the 21st century skills which are important factors to assure the success in the future world and move up the country's economic status. Article 23 of B.E. 2542 Education Act and B.E. 2553 3rd Amendment has stated that in setting up any education system, the concerned individuals have to realize the significance of knowledge, morality, learning process, and their integration in relevant to each

educational level and the effort to rush up the education reform to create the opportunity, equality, and participation by increasing three times resources and budgets. Their achievement was still low resulting in unequal education quality and the inappropriate learning organization system for the context of 21st century, particularly their learning skills and innovation which served as the mechanism for creating the student's learning readiness were indicated by the level of capacity in the world competition (Office of the Education Council [ONEC], 2014) which found that, in general, average achievement in every aspect of student had decreased. Moreover, the Program for International Student Assessment (PISA) to assess the 21st century skills revealed that Thailand was almost at the bottommost.

In the United States of America, educators had noted that the school educational system had not facilitated the development of skills needed for working and life maintaining. They then proposed the partnership for 21st century skills conceptual framework for 21st century learning by integrating 3 factors, namely, 1) core courses and main concepts in 21st century, 2) 21st century skills such as learning and innovative skills, information and technology, and life and working skills, and 3) system to support 21st century educa-

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tion including standards of assessment on curriculum and instruction, professional development, and environmental maintenance. They insisted that 21st century skills were the forces to build up the country's wealth. All these had led to the change of the learning paradigm for promoting 21st century skills. ONEC, (2014) had proposed the policy for reforming learning in the 21st century by designing the curriculum in an integrative and interdisciplinary way focusing on problem-based instruction or projects towards creating the workpiece to holistically solve the problem and apply it to everyday life. The findings revealed that the process could help developing the student's academic achievement, their realization of the value in searching for knowledge, developing high-level thinking skills, building up a good habit of systematic work, and happily co-existing in the society. Another educator, Panich, (2011) had viewed that "The thing to be firstly done is the education reform including administration which is like the giant mechanism to lead others to move forward too. Otherwise, the budget allocated in the old system would be a waste." The main target of new era education administrators in the development of learners to achieve the goals of the B.E.2542 Education Act, a popular conceptual framework to achieve sustainable quality is the open system theory. It could be concluded that the operation to achieve the organization's goals had a unitary set of factors systematically interrelated. These are inputs, transformational processes, outputs, feedback, and the environment. From reviewing the related researches, it was found that the crucial factors to facilitate the success in developing 21st century learning came up in 5 factors. These are learner's quality, teacher's leadership, curriculum, media and technology, administration and management, and school quality assessment system.

According to data analysis of the problem in learning management to develop learning in 21st century for students in Northeast sports school, it was found that learning and innovative skills which were considered to be the most important and necessary skills for further study as well as for working in the future were totally at the lowest level. As the education quality development of the education reform guideline in 21st century, it was needed to have well management system. From literature review, the researcher discovered the approach for learning development by applying open system theory. Lunenburg & Ornstein (1996) including education reform approach and external education quality assessment of sports school. To facilitate the success, a unitary set of systematically interrelated factors included 1) Inputs which lead to the achievement of integrated learning management, 2) Process for integrated learning management, 3) Outputs which were learning and innovation skills in 21st century, and 4) Feedback which was the satisfaction and learning process and development. In order to

accomplish the model of integrated learning management to develop learning in 21st century for students related to local context, the researcher sincerely expected that this study will be advantageous for those who were interested in and be prototype innovation for integrated learning management in accordance with the guideline for education reform in 21st century in order to drive human abilities to further competition in the future.

2. Research Objective

1. To study the conditions, problems, and factors facilitating integrated learning management for developing the 21st century learning of Northeast sports school
2. To construct and validate the integrated learning management model for developing 21st century learning of sports schools in the Northeast region utilizing participatory action research
3. To implement an integrated learning management model for developing 21st century learning of learners of Northeast sports school

3. Research Methodology

This research utilized mixed methods both quantitative and qualitative research. The research area was in Northeast sports schools in Khon Kaen, Ubon Ratchathani, and Si Sa Ket along with the 3 steps as follows:

Phase 1 To study the conditions, problems, and factors facilitating integrated learning management to develop learning in the 21st century of Northeast sports school, the researcher had divided this phase into 3 steps as following:

Step 1.1 - Studying the conditions, problems, and factors facilitating success by reviewing literature and researches related to integrated learning management for developing 21st century learning

Step 1.2 - Constructing the instruments for studying the conditions, problems, and factors facilitating success The results gained from step 1 were used to create a questionnaire and had its quality validated by experts in the aspects of content validity utilizing the item-objective congruence index (IOC). Afterward, the items with IOC between 0.8-1.00 were selected out to be tried out with the 30 subject-sample coming up with reliability of .82 via Cronbach's approach (Cronbach, 1974).

Step 1.3 - Concluding the conditions, problems, and factors facilitating success. In this step, the researcher used the research instruments to collect data from the target group and analyze them in terms of mean, standard deviation, content analysis on the conditions, problem, and factors facilitating the success of integrated learning management to develop learning in the 21st century.

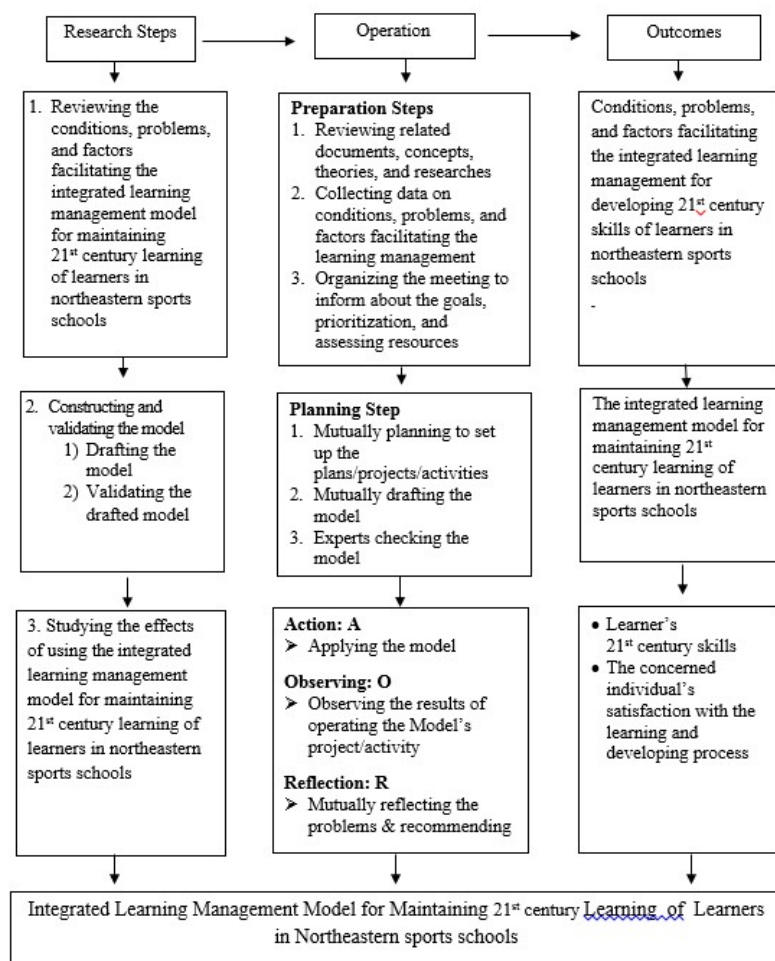


Figure 1: Research operational steps.

Phase 2 - Constructing and validating the integrated learning management model to develop the 21st century learning of Northeast sports school

In this step, the researcher studied by brainstorming with research subjects including school directors, deputy school director for academic affairs, head of the concerned divisions, and teachers teaching general subjects of sports school in Ubon Ratchathani totaling 16 subjects and representatives from sports schools in Si Sa Ket and Khon Kaen totaling 4 subjects for 20 subjects altogether. The subjects were selected via purposive sampling from the subjects who had working experience in sports school for 10 and up to collectively construct the model, along the 4 brainstorming main issues, namely, 1) factors, 2) indicators, 3) development process, and 4) plans/projects/activities used in the development. Data was analyzed utilizing content analysis. The researcher had operated along with the 2 steps as following:

Step 2.1 Drafting integrated learning management model to develop learning in the 21st century

2.1.1) Planning along with the following 2 steps:

1) Based on the data having been col-

lected, the researcher had concluded the conditions, problems, and, factors facilitating success by documenting the concluded data to be presented in the brainstorming session.

2) A form for recording the brainstorming was created in order to collect data on the conditions, problems, and factors and data on the success factors and indicators.

Step 2.2 Operating - along with the following 2 steps:

2.1.2) The brainstorming session taken part by the research subjects was organized in order to collectively review the conditions, problems, and success factors in addition to those having been collected in the first phase and working together to set up the operational plan, projects, and activities significant for and relevant to the guideline for developing education quality in the 21st century.

2.1.3) Two research assistants helped record the opinion of research subjects using the brainstorming recording form collecting the data from the research subjects in such a workshop. Phase 3 - The integrated learning management model was implemented to develop learning in the 21st century of

northeast sports school.

3.1 Applying the model in cooperation of the personnel of Ubon Ratchathani sports school along the process of the model

Firstly, the plan step (P) starts from organizing the focus group to collectively set up the operational plan, projects/activities along with the success indicators and operational calendar and sharing the responsibility. Secondly, the action step (A) was carried out to create integrated learning management model along the projects/activities of (1) workshop for developing the integrated curriculum, (2) analyzing the integrated curriculum, learning units, and learning calendar, (3) setting up the integrated learning plans, (4) carrying out the classroom research, (5) supervising the instruction, and (6) setting up the forum for displaying the operational outcomes and learning exchange. Thirdly, the observe step (O) was carried out to display the development outcomes by monitoring and evaluating during each activity of the process. Fourthly, the reflect step (R) was to display the progress and collectively check the operational outcomes along with the factors by learning exchange and reflecting on the operational outcomes, problems, and recommendations.

3.2 Studying the results of using the model

Firstly, the success of integrated learning management for developing 21st century learning along with the factors, in general, was most level. The highest mean was on administration and management which was at most level. The second one was on learner's quality, teacher's leadership, curriculum, media, and technology, and school quality assessment. Secondly, the satisfaction of the concerned individuals, in general, was at most level. The knowledge and development included ability in analyzing the curriculum, organizing the curriculum in an integrated way along with the standards, designing the operational calendar and problem-based integrated learning organization, carrying out the integrated learning program along problem-based approach and authentic measurement and evaluation along the classroom research to solve the problems and promote professional learning exchange.

4. Research Instrument

1. In studying the conditions, problems, and factors facilitating the success, the instrument was the five-point rating scale questionnaire.

2. In constructing and validating the integrated learning management model for developing 21st century learning, the instrument was the form for recording the brainstorming and the form for validating the model with five-point rating scales.

3. In studying the results of using integrated learning management model for developing 21st century learning, the instrument was the form for assessing

satisfaction with the success along five aspects of factors using a five-point rating scales questionnaire.

5. Materials and Methods

This research utilized the method participatory action research (PAR) as proposed by Kemmis & McTaggart (1988) and utilized PAOR process in constructing the administration model and the integrated learning management to develop learning in the 21st century for students of northeast sports school and came up with the results as shown in the following chart:

6. Conclusion

The research study was carried out and determined with the outcomes as follows:

Phase 1 Outcomes of developing the integrated learning management model for developing the 21st century learning of Northeast sports school could be concluded as follows:

1.1 In general, the practice was a little level with the one on learner's quality at was at the least level. Their practices ranked from the least to the most were teacher's leadership, media, and technology, and administration and management, each of which was a little level. Problems were at many levels with the one on learner's quality was at the most level, followed by the teacher's leadership, curriculum, media, and technology, and administration and management, respectively.

1.2 Concerning the significance of the success factor, it was found that, in general, the success factor was at most level. Considering by aspect, it was found that the one on educational administration and management had the highest mean, followed by curriculum, media, and technology, learning process and evaluation, teacher's leadership, and school quality assessment, respectively.

Phase 2 Results of constructing and validating the integrated learning management model to develop 21st century learning utilizing participatory action research having been conducted are as follows:

2.1 The model having been developed via an open system approach for administration with the factors interrelated to one another covered the following components:

2.1.1 Inputs are the factors facilitating success consisting of (1) curriculum, media, and technology, (2) learning and evaluation processes, (3) teacher leadership on instruction, (4) educational administration and management system, and (5) school quality assessment.

2.1.2 The process is the integrated learning management to develop the 21st century learning consisted of 3 steps as follows:

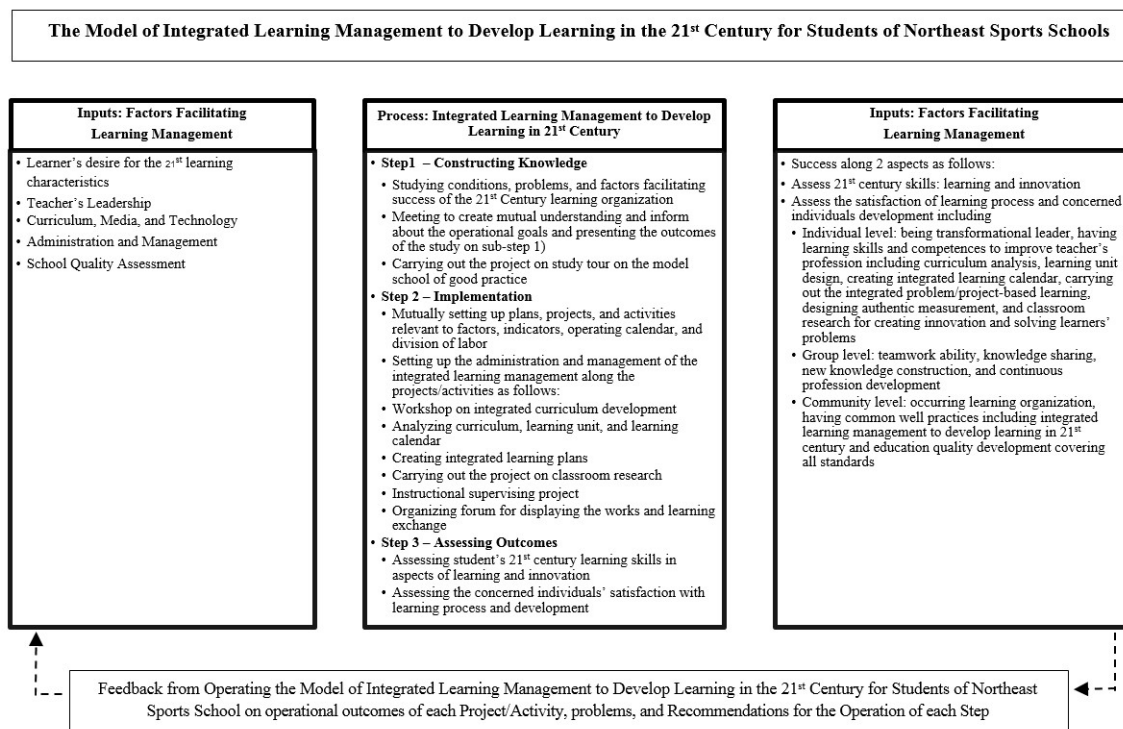


Figure 2: The Model of Integrated Learning Management to Develop Learning in the 21st century for Students of Northeast Sports Schools

Step 1 - Constructing knowledge by 1) reviewing the conditions, problems, and factors facilitating success in administration and management for 21st century learning, 2) holding a meeting to build up understanding and informing the operational goals and present the outcomes of the study on conditions, problems, and factors facilitating success, and, 3) carrying out the study tour to the school with best practice to open up the worldview of the concerned individuals

Step 2 - Implementing by 1) collectively set up the operational plan, and projects/ activities relevant to each factor, success indicators, operational calendar, and division of responsibility, 2) carrying out the integrated learning management along the project/activity of (1) workshop for developing the integrated curriculum, (2) analyzing the curriculum, integrated learning units, and learning calendar, (3) creating integrative learning organizing plans, (4) carrying out the classroom research training, (5) carrying out the instructional supervision, and (6) organizing the forums for presenting the operational outcomes and learning exchange

2.1.3 Outputs The success of applying the model was as follows: 1) 21st century learning skills on learning and innovation, 2) satisfaction and learning and developing processes of the concerned individuals at individual and community levels.

2.1.4 Feedback The process was carried out to mutually monitor along components of the model reflecting if the model had succeeded, the problems and obstacles, new body of knowledge, and recommendations for each operational steps to serve as the

data for setting up the plans further on.

Step 3 - Evaluating the operation composed of 1) evaluating the 21st century skills of the target group individuals, and, 2) evaluating satisfaction with the learning process and development of the concerned individuals.

2.2. Results of the model constructions revealed that the model having been developed is the model that has reached the standards on validity, appropriateness, and feasibility. It also is relevant to the context and able to be used for developing the quality of learners in Northeast sports school to cope with 21st century learning effectively. This might be because the model has been systematically constructed and validated along with the concerned principle.

2. Results of using integrated learning management model for developing the 21st century learning of Northeast sports school revealed the following implications:

2.1 The success of the integrated learning management model for developing 21st century learning, in general, was at most level. The aspect that was rated with the highest mean is administration and management which was at most level. The aspects whose success was rated at most levels respectively are learner's quality, teacher's leadership, and curriculum, media, technology, and school quality assessment.

2.2 Satisfaction with the use of integrated learning management model to develop the 21st century learning of the concerned individuals, in general, was at most level with the highest level of satisfaction with the display of student's works and learning exchange,

followed equally by study tour at the model school with good practice and workshop to develop integrative curriculum and facilitate learning process and development as follows:

2.2.1 At an individual level - the satisfaction was with leadership for the change, having skills in learning for self and teaching professional development with knowledge and ability to analyze the curriculum and design learning units, create the integrative learning calendar, design the learning integrated and problem/project-based instruction with an authentic measurement and evaluation reflecting the 21st century skills, create the instructional innovation, and conduct the research to develop the learner's learning.

2.2.2 At the group level - the satisfaction was with the team working, good interaction in the operation, learning exchange, and mutually creating new knowledge, continuously promoting professional development, such as carrying out curriculum and integrated learning units, maintaining the integrated learning calendar, utilizing media and innovation, and conducting classroom research of learning development.

2.2.3 At the community level, the learning of the community had improved. Teachers and students had practice time together, to develop education quality, covering all the standards, all of the learner's quality, process of administration and management, and instruction organizing process coming up with the product of innovation leading to integrated learning management to develop learning in the 21st century fitting the context along the founding philosophy of the sports school's founding and joining the guideline for education reform in the 21st century

7. Discussion

In researching the administration model and integrated learning management model for developing 21st century learning of sports schools in the Northeast region, the researcher would like to discuss along with the three issues as follows:

Phase 1 Outcomes of studying conditions, problems, and factors facilitating integrated learning management to developing learning in the 21st century of northeast sports schools are as follows:

1.1 Conditions, in general, showed that the practice was a low level with that on learner's quality was at the least level. The practices, ranging from the least to the most were teacher's leadership, curriculum, media, technology, and administration and management, each of which was at a low level. The problem, in general, was at a high level, leading by the one on learner's quality which was at most level. Others, ranked by mean, were on teacher's leadership, curriculum, media, and technology, and administration and management each of which was at many levels. This might be because the students in sports school had to learn

both academic and sports subjects to achieve the educational goals. Such requirements had burdened the students with responsibilities. Some schools changed the teachers during the terms resulting in discontinuity. The teachers concentrated on teaching the course to finish all the course contents as required by the curriculum lacked a true understanding of the goals of providing education in the 21st century including the context of sports school resulting in the irrelevant instruction failing to lead to sustainability. With a similar realization, Prabudhanitisarn, (2014) had stated that the factors leading to the true practicality were the teachers had to understand the nature of the complicated problems. They then had to get to work together to mutually solve the problems systematically with the instruments to be used in the learning process to assure the sustainable solution of the problems.

1.2 Concerning factors facilitating integrated learning management to developing learning in the 21st century of the northeast sports school, it was found that, in general, factors were significant at most levels. Considering by aspect, it was found that the educational administration and management had the highest mean of significance, followed by curriculum, media, and technology, learning process and evaluation, teacher's leadership, and school quality assessment, respectively. Every factor had an impact on education quality development. Nonetheless, the researcher had reviewed literature related to education quality development along with the guideline for education reform in the 21st century and found five factors relevant to the research goals facilitating the effort to develop education quality. Meanwhile, other agencies and authors (OBEC, 2008; Uppamaiathichai, 2014; Duangkaew, 2013) had similarly identified 4 main factors for education reform to develop the learners to reach universal standards and assure real, continuous, and sustainable change. These are (1) instructional process reform, (2) curriculum reform in which school set the desirable characteristics of learners and created and developed local curriculum in relevant to the learners, their community, and country with variety of learning plans, (3) teaching profession reform and development and educational personnel development to become the quality working team to collectively push forward for real education development, and, (4) administration and management process reform. This is congruent to Bryk. (1999) who stated that after the professional congruence and norm occurred in school, there would be an atmosphere for development occurring in the school. Such an atmosphere would stimulate the school teachers and personnel to try to find the new instructional method and trying it out along the system whose structure was compatible with other organizations. The process also required other operational structures such as community and planning, etc. (Forde, McMahon, McPhee, Patrick, 2006)

Phase 2 Results of constructing and validating integrated participatory administration and management model to develop learning in the 21st century via participatory action research are as follows:

2.1 The Model was congruent with the open system approach for administration which included the following factors:

2.1.1 Inputs - These are factors facilitating the learning administration and management covering 1) curriculum, media, and technology, 2) learning and evaluation processes, 3) teacher leadership on instruction, 4) educational administration and management system, and 5) school quality assessment.

2.1.2 Process - This is the integrated learning management to develop the 21st century learning covering 3 steps as follows:

Step 1 - This step included 1) studying the conditions, problems, and factors facilitating success, 2) organizing the forum to inform about the goals and present the results of studying on conditions, problems, and factors, and, 3) carrying out the study tour to learn from the model school with good practice to open up the worldview.

Step 2 The implementation was composed of 1) mutually setting up the plans, and projects/activities relevant to the factors and indicators of success, operational calendar, and division of labor, 2) integrating learning management plans along the following 6 activities - (1) organizing the workshop for developing integrative curriculum, (2) analyzing the integrated curriculum, learning units, and learning calendar, (3) setting up the integrative learning plans, (4) training for classroom research, (5) carrying out instructional supervision, and (6) setting up the form for displaying the work and promoting learning exchange.

Step 3 - Assessment included 1) evaluating the learner's 21st century skills on learning and innovation, and, 2) assessing satisfaction with the learning process and development of the concerned individuals

2.1.3 Outputs The success of applying the model is as follows: 1) 21st century learning skills on learning and innovation, 2) satisfaction and learning and developing processes of the concerned individuals at individual and community levels.

2.1.4 Feedback The process was carried out to mutually monitor along components of the model reflecting if the model had succeeded, the problems and obstacles, new body of knowledge, and recommendations for each operational steps to serve as the data for setting up the plans further on.

2.2 Results of validating the model of participatory integrated administration and management to develop learning in the 21st century revealed that the model having been developed is with standards on validity, feasibility, and relevancy to the context and could be used to effectively develop the quality of

learners in northeast sports schools to develop learning in the 21st century as the model had been systematically constructed and validated along technical principles.

Phase 3 Results of using the integrated learning management model to develop the 21st century learning of sports schools in the Northeast region revealed that:

3.1 The success of the assessment on integrated learning management for developing 21st century learning along with the factors, in general, was at most level. The aspect with the highest mean was administration and management which was at most level. The aspects ranked by success from the most to the least were learner's quality, teacher's leadership, curriculum, media and technology, and school quality assessment.

3.2 Satisfaction with using the integrated learning management model for developing the 21st century learning of the concerned individuals, in general, in every aspect was at most level. The aspect with the highest satisfaction was the display of student's work and learning exchange, followed by 2 aspects which had the same mean, namely, study tour to the model school with good practice, and the workshop for integrative curriculum development. This might have been because the person had traveled to study in the areas other than school. Such places were new to them and could open their worldview on learning and motivation for developing the instruction. They had been trained via the integrated learning program by the national level resource persons who had ability in transmitting knowledge and experience, facilitating teachers to put into practice to obtain knowledge and ability in applying them for developing instruction to carry out the learning and developing processes as follows:

3.1.1 At Individual Level - the trainees were to be the leader of change with operational skills to develop themselves and the teaching profession. They had knowledge and ability to analyze the curriculum and design the learning units, create integrative learning calendar, design integrated learning organization plans along with problem/project-based approach, and authentic measurement and evaluation reflecting 21st century skills, and create media and innovation, and carry out the research to develop the learner's learning.

3.1.2 At Group Level - the trainees had learned together and continuously develop their profession, team working, exchange learning, and mutually create new knowledge such as curriculum and integrated learning units, integrated learning calendar, media and innovation, and classroom research on learning development.

3.1.3 At community Level - personnel of the school had learned together to mutually carry out good practice, develop education quality covering all standards, namely, learner's quality, the process of admin-

istration and management, and learner-centered instructional process. They had obtained the integrated learning management model for developing the 21st century learning of sports schools in the Northeast region.

While Na Lampoon (2019) revealed that the integrated administration model for enhancing quality of world class standard schools was composed of principle, objectives, system, mechanism and operational methods. The model follows PDCAI cycle: Plan-Do-Check-Act-Improve. The results of the model assessment represented that the model effectiveness and satisfaction of the users were at the highest levels. The feedback showed that the school administrators should promote learning organization to actualize the school's vision along with the operational plan, evaluation method, good practice and benchmarks to assure desirable outcomes, efficiency and effectiveness.

This might have been because of the processes of developing the model and participatory action research in which they could mutually plan, conceptualize, practice, reflect and recommend resulting in the projects/activities. Learning from working together in small groups including the research process had also opened for interaction among individuals and groups. Similarly, Kemmis & Wilkinson (1998, cited in Karomprach, 2004) had proposed the basic principle of participation contending that it was the process of social change and personal development. Participation emerged from the interaction of people in society, aiming at understanding the problem, studying good practice, and learning via a practical process. Knowledge from the research process could come up with the cycle of research procedural steps along the process of criticism and reflection both before and after practice. Congruently, Smith (1997, cited in Sutthinarakorn, 2014) had proposed the principle of creating learning experience at individual and group levels to lead to self-development and change of the situation toward the goal one. The essence is the interaction among individuals and groups in the research process could facilitate the learning of individuals, groups, and organizations.

8. Recommendations

8.1 This research could be used to set up the strategy for teacher development of sports schools affiliating with Thailand National Sports University, Ministry of Tourism and Sports, along the collective process of studying the guideline in carrying out and facilitating sports school to be able to develop the 21st century learning along with the context of each area.

8.2 There should be some research and development on integrated learning management models for developing 21st century learning suitable for teachers of other types such as those affiliating to the Office of the Basic Education to lead to the development of

learner's quality along with guidelines for education reform covering all the target groups.

Acknowledgment

This article would not have been possible without the help and assistance of a few individuals who have provided me with invaluable support during its writing. The author gratefully acknowledges Assoc. Prof. Dr. Choocheep Puthaprasert advisor Asst. Prof. Dr. Yongyouth Yaboonthong and Lect. Dr. Suwan Muntabutara co-advisor for the guidance and enthusiasm.

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