Development of active learning management model for active citizenship competencies enhancement in elementary school

Supachai Somnual, Kittichai Suthasinobon, Rungtiwa Yamrung
Department of Curriculum and Instruction, Faculty of Education, Srinakharinwirot University, Bangkok, Thailand

Article Info

ABSTRACT

The purpose was to develop and study the effectiveness and efficiency of an active learning management model for developing active citizenship competencies for primary school students. The sample group was fifth-grade students at a demonstration school. The research instruments included a manual for the active learning management model, active learning lesson plans, an active citizenship competencies test, and a satisfaction questionnaire. Statistics for data analysis were percentage, mean, standard deviation, and dependent sample t-test. The research results were: i) A six-step active learning management model was designed for developing active citizenship competencies for primary school students (step 1 situation to the problem, step 2 original knowledge, step 3 collaboration, step 4 information gathering, step 5 active application, and step 6 lead to reflection and assessment). A consistency assessment (item objective congruence, 5-point scale) of the model by a group of experts resulted in the highest level (mean=4.69, SD=0.47); ii) The efficacy of the active learning management model in developing active citizenship competencies were measured for knowledge, higher-order thinking skills, and attributes. For each of the measured components, the improvement in average score was statistically significant at the 0.05 level; and iii) The satisfaction of students with active learning management was high (mean=4.47, SD=0.74).

Corresponding Author:

Kittichai Suthasinobon
Department of Curriculum and Instruction, Faculty of Education, Srinakharinwirot University
14 Sukhumvit 23, Watthana, Bangkok 10110, Thailand
Email: supachaibuu@gmail.com

1. INTRODUCTION

Good citizenship and national strength might begin with the creation of laws, regulations, educational plans, and programs, as well as classroom administration of teaching and learning. These aspects foster children and adolescents to become good family members, community and society members, and solid national and global citizens. These attempts are essential since the younger generations are the nation's primary resources [1], [2]. In the past, knowledge quality, abilities, and citizenship characteristics were the main factors that caused difficulties for the citizens of the society. Individuals who lack regard for the rights of others and disregard the public interest were commonly encountered. There were issues with the creation of the nation, as well as issues regarding conflicting viewpoints and ideologies without regard for the law and the rights of others. This emphasizes the significance of strengthening the foundations of citizenship development, which is now weak. Even though there are courses on creating active citizenship at different levels of education, students still have difficulties applying the lessons to real life, especially in the area of developing active citizenship competencies [3], [4].

Competency means the ability to perform a person's responsibilities within an organization in accordance with standards of utmost quality, efficiency, and effectiveness that comes from a persona comprising knowledge, skills, characteristics, or attributes [5], [6]. Studies of the concepts and characteristics of active citizenship can be summarized as active citizenship competencies comprising aspects of knowledge and understanding on politics, being a good citizen in a democratic manner, law and constitution, and the country's traditions and culture [7], [8]. Aspects of thinking skills consist of critical thinking skills, which could be classified into five aspects of thinking process skills which are: i) problem definition; ii) selection of information relevant to the problem; iii) awareness of preliminary agreements; iv) formulating and selecting the hypotheses; and v) making reasonable conclusions. Aspects on problem solving skills which could be classified into four aspects of thinking process skills which are: i) identify the problem; ii) problem analysis; iii) propose problem-solving method(s); and iv) examine the result [9]. Characteristics of an active citizen include the respect of other's rights and the law, having social responsibility, having civic participation, acceptance of individual differences, moreover, having morals and ethics. Development of in-class learning is needed in order to enhance active citizenship competencies [10], [11].

In the learning management system, active learning, developed by Dale between 1946 and 1985, is the most influential learning management concept in the twenty-first century. The concept of the active learning model is known as the "cone of learning". The active learning method enables students to retain the consequences of their learning activities for far longer than the passive learning process of memorization [12]. The active learning management philosophy emphasizes student engagement in which teachers organize learning in a manner that encourages students to participate in class through reading, listening, speaking, writing, discussions, difficult questions, and problem-solving activities.

There are opportunities for students to discover knowledge on their own by integrating expertise and personal experience which promote higher-order thinking skills, interaction, and knowledge exchange, while also concentrating on learning attitudes [13]–[15]. The following are the essential components of active learning management for developing fundamental skills: i) diversified activities or instructional techniques; ii) student encouragement to participate in the learning process that allows them to independently explore and seek information; iii) educational resources in the form of learning technologies and media that promote and motivate children to learn through real-world events; and iv) measurement and assessment based on actual circumstances using multiple strategies [16], [17].

We should create a learning management model for teaching and learning, in which teachers can utilize to educate students effectively and efficiently. This is because a learning management model is a condition, trait, or model that is arranged procedurally and systematically by diverse ideas, concepts, philosophies, theories, or beliefs. The model contains process elements or procedures that have been demonstrated and accepted through study to be utilized as a guideline for learning management to meet the learner's objectives [18]–[20]. The researcher aims to create a four-step strategy for fostering active citizenship competency through active learning: i) establishing what is required; ii) developing a strategy to accomplish what is required; iii) testing the method to determine its effectiveness; and iv) evaluating the results or efficacy [21]–[23] to enhance the learner's pursuit of knowledge. Individuals who used various strategies to learn new knowledge through real-world experiences have practiced until they discovered their expertise. This process also makes learners more enthusiastic about learning and promotes collaboration and interaction with others. Through documentation and reviews of previous researches, the researcher has conceived the concept of establishing the active learning management model. This is crucial in promoting higher efficiency for active citizenship competencies and the learner's satisfaction.

2. RESEARCH METHOD

This study included 150 fifth-grade students from Piboonbumpen Demonstration School, Burapha University, during the second semester of the 2021-2022 school year. Cluster random sampling was used to select samples of grade 5 students from Piboonbumpen Demonstration School, Burapha University. From a total of five classes, resulting in a sample of one classroom with 30 students.

2.1. Procedure

Step 1: the researcher used preliminary data from previous research as the foundation for the development of the active learning management model. Then, experts evaluated the efficiency of the model. To evaluate the consistency and appropriateness of the model, the index of item objective congruence (IOC) and a 5-point rating scale were used. After that, revisions were made by the experts' suggestions to complete the research model. Step 2: next, instruments were developed to be used in the active learning management model, namely, manual for the active learning management model, active learning lesson plans, active citizenship competencies test, satisfaction questionnaire survey on the class activities using the active

learning management model. Then, experts evaluated the efficiency of the model. To evaluate the consistency and appropriateness of the model, the index of IOC and a 5-point rating scale were used. After that, revisions were made following the experts' suggestions to complete the research model.

2.2. Research tool and data analysis

An assessment of active citizenship competencies was conducted on elementary school students before and after the active learning management model was utilized. The satisfaction questionnaire survey was taken after the learning activities using the active learning management model were completed. To evaluate the efficiency of the active learning management model, the mean ($\bar{X}$) and standard deviation were calculated. For the analysis of the competency results before and after the experiment, statistics of dependent sample t-test were used. Lastly, the analysis of the student's satisfaction with class activities using the active learning management model was measured at a high level.

3. RESULTS AND DISCUSSION

The result of the development of the active learning management model is based on the following principles: consider differences between individual learners, their learning styles, and their abilities. These principles aim to develop students' quality of knowledge acquisition, skills, characteristics, and attributes toward active citizenship competencies through extensive learning activities that promote participatory learning where students get to practice by constructing their own knowledge. In addition, teachers create opportunities for students to read, speak, listen, write, and solve problems using challenging questions to stimulate learning and provide learning activities that foster in-class collaboration rather than competition, relating the integrated information with the knowledge to apply to real life. Various authentic assessment methods are used for further development.

These principles contribute to active citizenship competencies in three areas which are knowledge acquisition, skills, and characteristics. The management of the learning process uses an active learning management process, employing the active learning management model with the goal to enhance active citizenship competencies of elementary students. The developed model, called the "social model", which contains learning activities in accordance with the concept of the active learning management model for the purpose of enhancing active citizenship competencies synthesized by the research, is comprised of several steps. Step 1 (situation problem): in this step, the teacher uses a problem-based learning strategy where the teacher would set up a scenario involving various problems from real situations, or situations related to the student's daily lives to arouse curiosity, confusion, challenges, and the interest to find solutions. Step 2 original knowledge: in this step, each student will propose methods to solve the problem using their prior knowledge. Each student is expected to have different fundamental knowledge, understanding, and thinking skills depending on their prior experiences. Step 3 (collaborative): in this step, students will be divided into small groups of 3-5 people with mixed abilities. This step will use a collaborative approach where students get to brainstorm, help each other understand and analyze the problem, explain the concerning issues, and coordinate to find information needed to solve the problem. Step 4 (information gathering): in this step, students in each group will gather information according to their plans using various methods and sources. Then, evaluate whether the information is sufficient and synthesize the information to come up with a solution. Step 5 (active application): in this step, students are allowed to propose a solution using the new knowledge that was constructed and the information that was synthesized into different topics. Then, use the knowledge to design active learning activities that lead to the solution, for example, exhibition board design activities, public education campaigns, and presentation of the information to other students. These activities can be deemed as turning learning into action. Step 6 (lead to reflection and assessment): in this step, students will discuss new findings and the experience they received from the active learning activities, and reflect on what they learned from collaborating with others. In addition, teachers and students will evaluate the results following anauthentic assessment, in accordance with the learning objectives. Then, teachers and students will present to the group their suggestions collected from performing active learning activities, problems and obstacles faced and feelings towards the learning activities. The social model is shown in Figure 1.

Measurement and evaluation of the active learning management model to enhance active citizenship competencies consist of an assessment of knowledge and understanding, an assessment of higher-order thinking skills, and an assessment of active citizenship characteristics. The instruments used for measurement and evaluation are the knowledge test, higher-order thinking skills test, and active citizenship characteristics assessment. Studies on the efficiency of the active learning management model by experts reveal that the index of IOC of the model has a value of 1.00 in every category with an overall mean of 0.92, which shows that the overall components of the active learning management model are congruent and appropriate at the highest level ($\bar{X}$=4.69, SD=0.47).

Figure 1. Management of learning process of active learning management model (social model)

The study's results on the effectiveness of the active learning management model in enhancing the active citizenship competencies of elementary school students. The results reveal that active citizenship competencies in terms of knowledge, higher-order thinking skills, and characteristics of an active citizen after receiving learning activities (post-test) using the active learning management model have a significant difference at the .05 level when compared to before attending the class (pre-test) are shown in Table 1. The results of active citizenship competency are shown before and after receiving learning activities using the active learning management model to enhance active citizenship competencies in elementary students. The results of the student's satisfaction with the learning activities using the active learning management model aiming to promote active citizenship competencies in elementary students reveal that the students' satisfaction with active learning activities was high-level ($\bar{X}$=4.46, SD=0.75), as shown in Table 2.

Table 1. Active citizenship competency using the active learning management model

Active citizenship competencies	n	$\bar{X}$		SD		t-test	Sig
		Pre-test	Post-test	Pre-test	Post-test		
1. Knowledge	30	21.83	29.90	5.87	4.77	12.44*	.000
2. Higher order thinking skills	30	19.40	24.80	6.27	6.54	5.74*	.000
3. Attributes	30	3.37	4.61	0.77	0.53	13.80*	.000

*p<0.05

Table 2. Student's satisfaction with learning activities using the active learning management model

Assessment item	Data analysis results (n=30)		
	$\bar{X}$	S.D.	Quality level
Teacher	4.50	0.77	Highest
Learning activities	4.40	0.77	High
Learning materials	4.42	0.74	High
Measurement and evaluation	4.51	0.72	Highest
Total	4.46	0.75	High

According to the result of this study, the active learning management model for developing citizenship competencies process includes six steps of the social model, which are step 1: situation problem; step 2: original knowledge; step 3: collaboration; step 4: information gathering; step 5: active application; and step 6: lead to reflection and assessment. The active learning management model synthesizes information from the active learning instructional approach and other relevant documented research. It considers differences between individual learners, their learning styles, and their abilities [24]. These principles aim to develop students' quality knowledge acquisition, skills, characteristics, and attributes toward active citizenship competencies through extensive learning activities that enhance participatory learning, where students practice by constructing their knowledge.

In addition, teachers create opportunities for students to read, speak, listen, write, and solve problems using challenging questions to stimulate learning and provide learning activities that foster in-class

collaboration rather than competition. These exercises allow students to integrate information and make connections with knowledge. Though the active learning management model is defined with clear steps, the users can design methods to develop learners until they achieve their goals [25]. In the data analysis of knowledge citizenship competency in higher-order thinking skills and citizenship attributes, students who studied with the active learning management model had higher learning achievement in the post-test than in the pre-test with a significant difference at the 0.05 level, possibly because the active learning management model considers the learner's differences and skills and use a variety of learning activities that promote participation.

Through the active learning management model, learners can gain and construct new knowledge independently, while the role of the teacher is to facilitate collaborative reading, speaking, listening, and problem-solving among students. In addition, teachers develop challenging questions and encourage students [26]. The teacher used activities to promote collaboration rather than competition and integrated information linked to knowledge. Students developed citizenship competencies through the active learning principles, especially in the aspects: i) knowledge; ii) critical thinking skills; and iii) attributes, including responsibility, public participation, and the understanding of how to respect the rights of others in the society and accept individual differences in the community [27]. The teacher should support and develop civic competencies in the primary education system, arrange the educational system for managing the civic competencies of schoolchildren both in and outside the classroom, or develop a learning material to assist students in applying them to real lives [28], [29].

After using the active learning model, learning achievement was statistically higher than before. Teachers, learning activities, materials, and measurements all received high student marks. The active learning model's exact steps foster problem-solving and critical thinking skills, emphasizing teamwork to achieve goals and create a fun learning environment. [30], [31]. Some activities differ from traditional learning management in which students feel challenged [32]. Teachers transition from being educators to facilitators of the learning process. A positive interaction between the instructor and the learner [33]. According to the research study's findings, active learning management considers the use of teaching styles and the specific needs of the learners. Active learning can assist students in developing ideas, attitudes, and satisfaction with teachers' learning activities, as well as improve measurement and evaluation [34], [35].

4. CONCLUSION

The active learning management or social model consists of a 6-step learning process. When used to provide learning activities for students in the classroom, The researcher found that it can help promote active citizenship competencies to increase. And can create student satisfaction at a high level from the use of the social model in learning activities. The researcher also found that the problem situation that was the starting point in the learning activities should be a current or anticipated problem. There are both the use of pictures. Video clip media gives the learners the enthusiasm and wonder to encourage more learning by dividing the students into small groups to exchange ideas, resulting in higher work efficiency than working alone. Various learning activities, such as game and song activities, role-plays, and exhibitions, help learners enjoy learning and reduce stress. The role of the teacher must be friendly, open-minded, accepting, and supportive of the student's opinions. Able to respond quickly to learners when students ask for advice during and after school hours. It is important to help create satisfaction for the students as well. The social model is, therefore, beneficial to primary school teachers who can apply it as a guideline for learning activities at the grade level that he continued to teach.

REFERENCES

[1]   A. Solimano, *Political crises, social conflict and economic development: The political economy of the Andean region*. Cheltenham: Edward Elgar Publishing, 2005, doi: 10.4337/9781845425715.
[2]   K. J. Kennedy and X. Kuang, "Predictors of Asian adolescents' democratic understanding," in *Good citizenship for the next generation: A global perspective using IEA ICCS 2016 data*, 2021, pp. 171–191, doi: 10.1007/978-3-030-75746-5_10.
[3]   A. Sen, "Three evils of citizenship education in Turkey: ethno-religious nationalism, statism and neoliberalism," *Critical Studies in Education*, vol. 63, no. 3, pp. 307–322, May 2022, doi: 10.1080/17508487.2020.1761849.
[4]   W. Schulz, J. Ainley, J. Fraillon, B. Losito, and G. Agrusti, *IEA international civic and citizenship education study 2016 assessment framework*. Cham: Springer International Publishing, 2016, doi: 10.1007/978-3-319-39357-5.
[5]   R. E. Boyatzis, "Competencies in the 21st century," *Journal of Management Development*, vol. 27, no. 1, pp. 5–12, Jan. 2008, doi: 10.1108/02621710810840730.
[6]   R. E. Boyatzis, "Competencies as a behavioral approach to emotional intelligence," *Journal of Management Development*, vol. 28, no. 9, pp. 749–770, Sep. 2009, doi: 10.1108/02621710910987647.
[7]   E. Myoung and P.-Y. Liou, "Adolescents' political socialization at school, citizenship self-efficacy, and expected electoral participation," *Journal of Youth and Adolescence*, vol. 51, no. 7, pp. 1305–1316, Jul. 2022, doi: 10.1007/s10964-022-01581-w.

[8] B. Hoskins, M. Saisana, and C. M. H. Villalba, "Civic competence of youth in Europe: measuring cross national variation through the creation of a composite indicator," *Social Indicators Research*, vol. 123, no. 2, pp. 431–457, Sep. 2015, doi: 10.1007/s11205-014-0746-z.

[9] R. H. Ennis, "Critical thinking assessment," *Theory Into Practice*, vol. 32, no. 3, pp. 179–186, Jun. 1993, doi: 10.1080/00405849309543594.

[10] K. Børhaug, "Norwegian civic education-beyond formalism?" *Journal of Social Science Education*, vol. 9, no. 1, pp. 66–77, 2010.

[11] V. Papa and D. L. Milioni, "Active citizenship or activist citizenship? a framework for studying citizenship in new social movements and the role of ICTs," *Networking Knowledge: Journal of the MeCCSA Postgraduate Network*, vol. 6, no. 3, pp. 21–37, Nov. 2013, doi: 10.31165/nk.2013.63.303.

[12] B. Davis and M. Summers, "Applying Dale's cone of experience to increase learning and retention: a study of student learning in a foundational leadership course," in *QScience Proceedings*, Jun. 2015, pp. 1–7, doi: 10.5339/qproc.2015.wcee2014.6.

[13] M. Prince, "Does active learning work? A review of the research," *Journal of Engineering Education*, vol. 93, no. 3, pp. 223–231, Jul. 2004, doi: 10.1002/j.2168-9830.2004.tb00809.x.

[14] S. Hartikainen, H. Rintala, L. Pylväs, and P. Nokelainen, "The concept of active learning and the measurement of learning outcomes: a review of research in engineering higher education," *Education Sciences*, vol. 9, no. 4, pp. 1–19, Nov. 2019, doi: 10.3390/educsci9040276.

[15] A. Mitchell, S. Petter, and A. Harris, "Learning by doing: twenty successful active learning exercises for information systems courses," *Journal of Information Technology Education: Innovations in Practice*, vol. 16, pp. 21–46, 2017, doi: 10.28945/3643.

[16] R. M. Peterson, "Course participation: an active learning approach employing student documentation," *Journal of Marketing Education*, vol. 23, no. 3, pp. 187–194, Dec. 2001, doi: 10.1177/0273475301233004.

[17] M. K. Salemi, "An illustrated case for active learning," *Southern Economic Journal*, vol. 68, no. 3, pp. 721–731, Jan. 2002, doi: 10.2307/1061730.

[18] S. ben Hamida, A. Maaloul, and S. ben Hamida, "The pedagogical innovation serving technological education," *Creative Education*, vol. 7, no. 1, pp. 20–31, 2016, doi: 10.4236/ce.2016.71003.

[19] M. Gatot, "Learning pyramid models to improve early childhood science skills," *Archives of Business Research*, vol. 6, no. 10, pp. 308–323, Oct. 2018, doi: 10.14738/abr.610.5379.

[20] K. Changwong, A. Sukkamart, and B. Sisan, "Critical thinking skill development: analysis of a new learning management model for Thai high schools," *Journal of International Studies*, vol. 11, no. 2, pp. 37–48, Jun. 2018, doi: 10.14254/2071-8330.2018/11-2/3.

[21] Y. Demchenko, D. Bernstein, A. Belloum, A. Oprescu, T. W. Wlodarczyk, and C. de Laat, "New instructional models for building effective curricula on cloud computing technologies and engineering," in *2013 IEEE 5th International Conference on Cloud Computing Technology and Science*, Dec. 2013, pp. 112–119, doi: 10.1109/CloudCom.2013.160.

[22] A. L. Langer, B. L. Block, R. M. Schwartzstein, and J. B. Richards, "Building upon the foundational science curriculum with physiology-based grand rounds: a multi-institutional program evaluation," *Medical Education Online*, vol. 26, no. 1, pp. 1–6, Jan. 2021, doi: 10.1080/10872981.2021.1937908.

[23] A. Sriwongchai, "Developing the mathematics learning management model for improving creative thinking in Thailand," *International Education Studies*, vol. 8, no. 11, pp. 77–87, Oct. 2015, doi: 10.5539/ies.v8n11p77.

[24] M. T. H. Chi and R. Wylie, "The ICAP framework: linking cognitive engagement to active learning outcomes," *Educational Psychologist*, vol. 49, no. 4, pp. 219–243, Oct. 2014, doi: 10.1080/00461520.2014.965823.

[25] X. Yang and P. Chen, "Applying active learning strategies to develop the professional teaching competency of Chinese college student teachers in the context of geography education," *International Journal of Learning, Teaching and Educational Research*, vol. 21, no. 7, pp. 178–196, Jul. 2022, doi: 10.26803/ijlter.21.7.10.

[26] R. Méndez, Á. Chaparro-Sainz, R. M. Sánchez, and M. del M. F.-D. la Fuente, "Evaluation of a training program for trainee teachers in active methodologies for teaching social sciences," in *Cases on historical thinking and gamification in social studies and humanities education*, Hershey, Pennsylvania: IGI Global, 2022, pp. 259–280, doi: 10.4018/978-1-6684-5240-0.ch015.

[27] E. Katsamakas, K. Miliaresis, and O. V. Pavlov, "Digital platforms for the common good: social innovation for active citizenship and ESG," *Sustainability*, vol. 14, no. 2, pp. 1–12, Jan. 2022, doi: 10.3390/su14020639.

[28] K. Maass, S. Sorge, M. Romero-Ariza, A. Hesse, and O. Straser, "Promoting active citizenship in mathematics and science teaching," *International Journal of Science and Mathematics Education*, vol. 20, no. 4, pp. 727–746, Apr. 2022, doi: 10.1007/s10763-021-10182-1.

[29] L. Becchetti and G. Conzo, "Resilience, social capital, active citizenship and subjective wellbeing: the contribution of generativity," *SSRN Electronic Journal*, vol. 19, no. 7, pp. 1–41, 2022, doi: 10.2139/ssrn.4139070.

[30] D. Camacho and J. Legare, "Opportunities to create active learning techniques in the classroom," *Journal of Instructional Research*, vol. 4, no. 2015, pp. 38–45, Aug. 2015, doi: 10.9743/JIR.2015.5.

[31] R. Capone, "Blended learning and student-centered active learning environment: a case study with STEM undergraduate students," *Canadian Journal of Science, Mathematics and Technology Education*, vol. 22, no. 1, pp. 210–236, Mar. 2022, doi: 10.1007/s42330-022-00195-5.

[32] N. Vasilakis, A. Benetopoulos, S. Handa, A. Schoen, J. Shen, and M. C. Rinard, "Supply-chain vulnerability elimination via active learning and regeneration," in *Proceedings of the 2021 ACM SIGSAC Conference on Computer and Communications Security*, Nov. 2021, pp. 1755–1770, doi: 10.1145/3460120.3484736.

[33] C. Hushman, A. Pun, and S. Knottenbelt, "Active learning classrooms," in *Journal of College Science Teaching*, 2021, vol. 52, no. 1, pp. 43–49.

[34] Z. Daouk, R. Bahous, and N. N. Bacha, "Perceptions on the effectiveness of active learning strategies," *Journal of Applied Research in Higher Education*, vol. 8, no. 3, pp. 360–375, Jul. 2016, doi: 10.1108/JARHE-05-2015-0037.

[35] O. Akınoğlu and R. Ö. Tandoğan, "The effects of problem-based active learning in science education on students' academic achievement, attitude and concept learning," *EURASIA Journal of Mathematics, Science and Technology Education*, vol. 3, no. 1, pp. 71–81, Jun. 2007, doi: 10.12973/ejmste/75375.

BIOGRAPHIES OF AUTHORS

Supachai Somnual 🆔 🔍 SC ⬦ is a Ph.D. Candidate, Department of Educational Sciences and Learning Management, Graduate School, Srinakharinwirot University, Thailand and also, he is a Head of Academic Department Piboonbumpen Demonstration School, Burapha University. He has experience as a Teacher at Piboonbumpen Demonstration School start 2004 until now. He is passionate about raising the quality of teaching and learning of students and their development in the schools. Research interests lie in the teacher education, social studies education, higher education, 21st century teaching and learning, school-based assessment, profession learning community, and active citizenship competency. He can be contacted at email: supachais@buu.ac.th.

Kittichai Suthasinobon 🆔 🔍 SC ⬦ is an Assistant Professor and Teacher Educator at Department of Educational Sciences and Learning Management, Faculty of Education, Srinakharinwirot University, Thailand. He has over 15 years of experience as an Academician with the Srinakharinwirot University (SWU), where he is currently an Assistant Professor and the Chair of the Department of Educational Sciences and Learning Management (Ph.D. Program). His research focuses on curriculum and instruction, Buddhist education, educational sciences and learning management, and mindfulness-based learning. He can be contacted at email: dr.kittichai2010@gmail.com.

Rungtiwa Yamrung 🆔 🔍 SC ⬦ is an Assistant Professor and Teacher Educator at Department of Educational Sciences and Learning Management, Faculty of Education, Srinakharinwirot University, Thailand. She has over 20 years of experience as an Academician with the Srinakharinwirot University (SWU), where she is currently an Assistant Professor and the Dean of the Faculty of Education Srinakharinwirot University. Her current research interest includes students' learning and development at various levels and areas of education, and teacher education, mathematics education, higher education, 21st century teaching and learning, school-based assessment. She can be contacted at email: rungtiwa@g.swu.ac.th.