

Research Article

**The development of an instructional model incorporating collaborative leadership for the Thai traditional medicine course ‘Prakumpera Prathomjinda’**

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**Abstract**

The objectives of this study were to develop an instructional model incorporating collaborative leadership for the Thai traditional medicine course ‘Prakumpera Prathomjinda’, survey the students’ perceived development of skills in teamwork, interpersonal relationship, and leadership, and assess their academic achievement in the course. The sample comprised 33 second year undergraduate students enrolled in the second semester of the academic year 2019 at the School of Integrative Medicine of Mae Fah Luang University. The research instruments were the to be in the highest level for all the three skills with the rating for teamwork standing at  $4.53 \pm 0.57$ , the rating for interpersonal relationship reaching  $4.58 \pm 0.59$ , and the rating for leadership equaling  $4.53 \pm 0.60$ . In terms of their academic achievement, the students obtained a pre-test score of  $21.06 \pm 3.19$  but a post-test score of  $40.03 \pm 2.56$ , or a statistically significant increase at the level of 0.05.

**Keywords:** *Instructional model, Thai traditional medicine, Teamwork, Interpersonal relationship*

**1. Introduction**

Contemporary instructional management embraces the principle that all learners can acquire knowledge and develop themselves. Thus, instructional management of the present day places the utmost emphasis on learners, aiming to enable them to realize their full potential by creating an environment that stimulates their thought and enhances their ability to solve problems through the application of a broad spectrum of disciplines. Modern instructional management also responds to directions of workforce production and development as well as industry requirements by equipping learners with the skills necessary for their professional life as well as economic and social development.

The specific skills constituting the capacity of the 21<sup>st</sup> century are 3Rs+8Cs+2Ls. 3Rs involves abilities relating to reading, writing, and arithmetic. 8Cs encompasses skills relating to critical thinking and problem solving; creativity and innovation; collaboration, teamwork, and leadership; cross-cultural understanding; communication, information, and media literacy; computing and information technology literacy; career and learning self-reliance; and change. 2Ls involves

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capabilities relating to learning and leadership. (Slavin, 1987; Poodibud, 2010; Plenjit, 2015; Panich, 2014; Redmond, 2016)

Among the above 21<sup>st</sup> century skills, collaboration, teamwork, and leadership play a vital role. Since such skills help learners effectively communicate, interact, and work with other individuals, not only are they useful in their own right, but they are also likely to create a trait instrumental to learning autonomy and life-long learning. One approach widely used to promote skills in collaboration, teamwork, and leadership is collaborative teaching.

Collaborative learning, otherwise referred to as reciprocal learning, team learning, or, most commonly, cooperative learning, is an instructional management approach centering on joint intellectual effort by students. In collaborative classrooms, students usually work in groups of two or more to collectively achieve a group goal, acquire academic knowledge, and develop social skills. Meanwhile, emphasis on the teacher and/or lectures fades in favor of an instructional process carefully blending typical learning activities, such as listening and note-taking, and students' interaction with the content through group discussions and assignments. In short, collaborative learning treats learners as the center of the cognitive and social skill development process. (Kathery AS Lancaster, 2001; Jaitiang, 2007; Brady & Tsay, 2012; Surendan Er, Bengu Aksu Atac, 2014)

Collaborative learning is a learning environment that requires students to collectively work towards a common academic goal. Collaborative learning enables students to develop the important life skills of working jointly with others on shared problems or challenges. Collaborative learning also provides an environment where students have the opportunity to share their expertise, to clarify and refine their own thinking through the process of sharing, and to also learn from one another (Kotsopoulos, 2010) For example, Cohen (1984, 1994) asserts that the need for the collective efforts of all students are pivotal in order to achieve the common academic goal.

The organizational and group research on leadership has historically focused on the vertical influence of leaders on members. Research on vertical leadership has contributed to the understanding of how leaders influence followers through communication.(Kramer & Crespy, 2011) For example, leaders influence followers by setting goals, giving directions, summarizing, and by not participating too much (Schultz, 1980). Leaders influence followers by spending significant amounts of time communicating with them, particularly through spontaneous, informal communication, and by providing development opportunities (Luthans & Larsen, 1986).

Collaborative or shared leadership has frequently been advocated as an alternative to vertical or top-down leadership. For example, Kramer & Crespy (2011) findings that identified specific behaviors and communication patterns used by this leader can transfer to other similar settings and assist group leaders in accomplishing their desired level of collaboration as they share leadership. Collaboration is more of a continuum than an all-or-nothing factor. Skilled leaders can choose a level of collaboration they want and then communicate to achieve that level of collaboration in their various work groups, departments, or committees. In this group, there was a fairly high degree of collaboration and yet the leader was able to create his evolving vision for the group.

In 'Prakumpera Prathomjinda', a Foundation I course in Thai traditional medicine at the School of Integrative Medicine of Mae Fah Luang University, some learning contents, such as pregnancy, childbirth, and child care, are difficult to comprehensively deliver in the classroom. Therefore, the present study aimed to:

1. Develop an instructional model incorporating collaborative leadership for the 'Prakumpera Prathomjinda' course,
2. Survey the students' perceived development of skills in teamwork, interpersonal relationship, and leadership, and
3. Assess their academic achievement in the course resulting from the application of the instructional model.

## 2. Methodology

### 2.1 Research design

This action research implemented a pretest-posttest experimental design. To assess their academic achievement, the student subjects took a pretest and a posttest before and after being taught the course content following the instructional model developed. To explore their perceived development of skills in teamwork, interpersonal relationship, and leadership, a survey was also administered. Action research in this time, using principles and research procedures according to the concept of Kemmis, S. and Mc Taggart, R. (1990) as a guideline for conducting research.

### 2.2 Population and sample

The population was undergraduate students in the Applied Thai Traditional Medicine Program, the School of Integrative Medicine, Mae Fah Luang University. The sample comprised 33 second year undergraduate students enrolled in the 'Prakumpera Prathomjinda' course in the second semester of the academic year 2019.

### 2.3 Research instruments and validation of the research instruments

The research instruments were an instructional model incorporating collaborative leadership developed to guide the delivery of the 'Prakumpera Prathomjinda' course; a survey questionnaire used to assess the students' perceived development of skills in teamwork, interpersonal relationship, and leadership (Jatupan, K. and Sanukul, K., 2017); and an achievement test used to evaluate their academic achievement in the course (School of Public Health Science, 2017).

The questionnaire contained 40 statements on a five-point Likert scale to which the subjects responded by specifying their level of agreement with them. Theory- and research-driven, the questionnaire was validated by 3 experts with the item-objective congruence (IOC) index standing at 0.80-1.00. Then it was trialed on 30 Applied Thai Traditional Medicine students not participating in the study with the reliability score reaching 0.90. Response score interpretations are displayed in Table 1.

### 2.4 Data collection

The data were collected in five stages as follows.

2.4.1 The subjects were equally divided into three groups: strong, moderate, and weak, using their grade average as the criterion. After that, they were informed of their roles and the instructional method, goal and objectives, and steps.

2.4.2 The subjects took the pretest, comprising 40 questions designed to assess their knowledge of pre-pregnancy, pregnancy, delivery, and post-delivery. Their pretest scores were recorded.

2.4.3 The course was delivered following the instructional model formulated.

2.4.4 Upon the end of the course, the subjects took the posttest, an identical instrument to that used in the pretest. Their posttest scores were recorded.

2.4.5 The subjects completed the questionnaire to report their perceived development of skills in teamwork, interpersonal relationship, and leadership.

The research will be started for teaching and collecting data from October to December 2019.

Table 1: Average score ranges and interpretations

Average score ranges	Interpretations
4.51 – 5.00	Highest
3.51 – 4.50	High
2.51 – 3.50	Moderate
1.51 – 2.50	Low
1.00 – 1.50	Lowest

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## 2.5 Data analysis

2.5.1 The survey results were analyzed with descriptive statistics using mean and standard deviation.

2.5.2 The pretest-posttest results were analyzed with inferential statistics using a t-test.

## 3. Findings

The findings are divided into three sections: the development of the instructional model incorporating collaborative leadership for the 'Prakumpera Prathomjinda' course, the students' perceived development of skills in teamwork, interpersonal relationship, and leadership, and their academic achievement in the course.

### 3.1 Development of the instructional model

The instructional model adopted an action research approach, comprising five stages of activities as follows:

Preparation, involving analyzing the students and the instructional content and formulating the instructional objectives,

3.1.2 Teaching, involving providing an introduction to each lesson and delivering the content,

3.1.3 Collaborative learning, involving doing group activities, conducting research on the tasks assigned, and participating in discussions,

3.1.4 Application, involving working on exercises and assignments and taking tests, and

3.1.5 Conclusion and evaluation, involving drawing a conclusion of the lesson and carrying out an evaluation of the group activities.

### 3.2 Students' perceived development of skills in teamwork, interpersonal relationship, and leadership

Table 2: Development of teamwork skills

Item no.	Statements	Mean	S.D.
1	Group members learned to collaborate.	4.70	0.46
2	I felt a sense of task ownership and played a part in achieving the goal of the group.	4.39	0.74
3	I knew how to exchange opinions without insulting other group members.	4.33	0.54
4	I realized that task achievement depended on the contribution of every group member.	4.73	0.51
5	I learned to trust others in group work.	4.64	0.48
6	I learned that teamwork required listening to others in order to reduce conflict.	4.64	0.54
7	Group members realized the importance of placing the group success above their own interests.	4.45	0.71
8	Group members were aware of the importance of comprehending the goal and methods of collaboration.	4.64	0.48
9	Group members had a chance to practice communication to promote mutual understanding.	4.55	0.61
10	Group members practice being silent, observing the atmosphere, and taking notes while working in a group.	4.33	0.59
Average		4.53	0.57

From Table 2, overall the development of teamwork skills was perceived to be in the highest level with the rating equaling  $4.53 \pm 0.57$ . Considered individually, Item 4 received the highest rating

at  $4.73\pm 0.51$ , followed by Item 1 at  $4.70\pm 0.64$  and Items 5 and 6 at  $4.64\pm 0.48$  and  $4.64\pm 0.54$ , respectively.

Table 3: Development of interpersonal relationship skills

Item no.	Statements	Mean	S.D.
1	I learned that I also took responsibility for my group members' work.	4.82	0.46
2	I learned to attach importance to creating an environment conducive to task achievement.	4.61	0.60
3	I learned when to speak out and when to remain silent.	4.42	0.66
4	I realized the importance of helping other group members with their unfinished work.	4.48	0.61
5	I learned to respect myself and other group members.	4.58	0.61
Average		4.58	0.59

As shown in Table 3, overall the development of interpersonal skills was reported to be in the highest level with the rating reaching  $4.58\pm 0.59$ . Considered individually, Item 1 earned the highest rating at  $4.82\pm 0.46$ , followed by Item 2 at  $4.61\pm 0.60$  and Item 5 at  $4.58\pm 0.61$ .

Table 4: Development of leadership skills

Item no.	Statements	Mean	S.D.
1	I learned how to use technology to carry out basic information search.	4.61	0.55
2	I practiced information analysis skills for presentation to my group.	4.52	0.61
3	I practiced communication skills to effectively convey information about my research.	4.52	0.56
4	I learned how to listen to other group members' opinions on my work.	4.52	0.66
5	I learned to comprehend my group's decision about an assigned task and prepare for a whole class presentation.	4.48	0.61
Average		4.53	0.60

According to Table 4, overall the development of leadership skills was perceived to be in the highest level with the rating standing at  $4.53\pm 0.60$ . Considered individually, Item 1 was given the highest rating at  $4.61\pm 0.55$ , followed by Items 2, 3, and 4 at  $4.52\pm 0.61$ ,  $4.52\pm 0.56$ , and  $4.52\pm 0.66$ , respectively.

### 3.3 Students' academic achievement

The findings indicated a statistically significant improvement in the students' academic achievement with the score jumping from the pretest of 21.06 to the posttest of 40.03 (Table 5).

Table 5: Students' academic achievement before and after the implementation of the instructional model

Academic achievement	Mean	S.D.	Mean Difference	<i>P</i>
Pretest	21.06	3.19		
Posttest	40.03	2.56	24.12	0.00

\*Significant at the level of 0.05

## 4. Discussion

The instructional model incorporating collaborative leadership developed in this study comprised five stages of activities, namely preparation, teaching, collaborative learning, application, and conclusion and evaluation (Slavin, 1987). The findings demonstrated that the model could greatly

enhance the subjects' skills in teamwork, interpersonal relationship, and leadership through self-directed information search, knowledge exchanges and idea sharing within a group, and collaboration for task completion.

The present findings agree with Thinhanwong (2015). In her review article on participatory learning, Thinhanwong (2015) postulates that participation in knowledge exchanges and idea sharing helps encourage a sense of learning responsibility, hands-on planning of group activities, learning outcome reporting, creation of connections between existing experience and new knowledge, and discussion of problems. If (rightly) applied in a heterogeneous classroom, i.e. one with students of varying skill levels, participatory learning will promote interdependence and mutual responsibility, a conducive learning environment, interpersonal relationship skills, and leadership traits.

The findings reported in this study are also corroborated by those in Sabaiying (2018). In her research, she developed a guidance package for promoting the collaboration, teamworking, and leadership skills of leaders of the Students' Club of Sukhothai Thammathirat Open University (STOU). The subjects, selected through a multi-stage random sampling method, were divided into two groups: 28 in the control group and 28 in the experimental group. The research instruments were the guidance package, a group discussion form for STOU faculty members serving as Students' Club advisors, and a survey questionnaire to assess such skills. The results indicated that prior to the implementation of the guidance package, the subjects in both the groups did not differ significantly in terms of collaboration, teamwork, and leadership skills. In contrast, after the guidance package was administered, the experimental group exhibited a significantly higher level of all the three skills at the level of 0.05.

Additionally, the present findings are supported by those reported in Phumbandit (2020). In his study, Phumbandit (2020) examined the effects of a collaborative learning approach on the academic achievement of 42 third year undergraduate management students enrolled in the first semester of the academic year 2018 at the Faculty of Business Administration of Chandrakasem Rajabhat University. The data were collected using the Thai Qualifications Framework for Higher Education Form 3, an achievement test comprising 20 multiple-choice questions with four answer options, and a survey questionnaire to assess the subjects' attitudes toward the collaborative learning approach. According to his findings, the subjects exhibited significantly higher academic performance at the level of 0.05 and reported a high level of satisfaction with the collaborative learning approach.

Despite unidirectionally positive outcomes reported for collaborative learning, some counterevidence can be found in the literature. For instance, Jatupan and Sanukul (2017) revealed that although their instructional model integrating cooperative learning succeeded in promoting students' perceived development of skills in teamwork, self-directed information search, and interpersonal relationship, it did little to improve their understanding of the course content. This suggests that the roles of collaborative learning in enhancing academic achievement may still be inconclusive and thus require further research.

## 5. Conclusion

In this research, an instructional model incorporating collaborative leadership was developed for the 'Prakumpera Prathomjinda' course. Then the students' perceived development of skills in teamwork, interpersonal relationship, and leadership was assessed. Finally, their academic achievement resulting from the application of the instructional model was evaluated. According to the findings, the instructional model comprised five stages of activities, namely preparation, teaching, collaborative learning, application, and conclusion and evaluation. In addition, all the three skills were perceived to be in the highest level with the overall ratings exceeding 4.50, highlighting the roles of the instructional model in promoting those important skills of the 21<sup>st</sup> century. Finally, the students' academic achievement in the course was outstanding, as evidenced by the statistically significant

increase from the pretest score of 21.06 to the pretest score of 40.03 ( $p < 0.05$ ). Based on the findings, it can be concluded that due to its benefits for skill development and academic achievement, a collaborative learning approach should form an integral part of any instructional model.

## 6. Suggestions

### 6.1 Recommendations for application of the findings

6.1.1 As previous research shows, and the present findings confirm, collaborative leadership can be adopted in teaching students in other disciplines and levels.

6.1.2 To maximize the effectiveness of an instructional model incorporating collaborative leadership, the instructional goal and objectives, activities, and steps need to be explicated to students.

### 6.2 Recommendations for further research

To ensure genuine applicability to the real world, an instructional model incorporating collaborative leadership should be experimented on students in other disciplines than Thai traditional medicine and in other levels than the second year of an undergraduate program.

## References

1. Brady and Tsay, (2012). A case study of cooperative learning and communication pedagogy: Does working in teams make a difference ?. *Journal of the Scholarship of Teaching and Learning* 2(10), 78-89.
2. Cohen, E. G. (1984). Talking and working together: Status, interaction, and learning. In P. L. Peterson, L. C. Wilkinson, & M. Hallinan (Eds.), *The social context of instruction: Group organization and group processes* (pp. 171–187). Orlando, FL: Academic Press, Inc.
3. Cohen, E. G. (1994). Restructuring the classroom: Conditions for productive small groups. *Review of Educational Research*, 64(1), 1-35.
4. Jaitiang, A. (2007). *Principles of teaching*. (4<sup>th</sup> ed). Bangkok: Odeon Store.
5. Jatupan, K., & Sanukul, K. (2017). A study of cooperative learning classroom in health system classrooms: A case study of Pharmacy Technique students at the Sirindhorn College of Public Health, Khon Kaen, Thailand. *Proceedings of the 8<sup>th</sup> National and International Conference, Hatyai University, Thailand, June 22, 2017, 524-533.*  
[http://www.hu.ac.th/conference/conference2017/proceedings/data/05-2-Poster%20Presentation/1.Education/02-035E-P\(กาญจนนา%20จิตพันธ์\).pdf](http://www.hu.ac.th/conference/conference2017/proceedings/data/05-2-Poster%20Presentation/1.Education/02-035E-P(กาญจนนา%20จิตพันธ์).pdf).
6. Kathryn A.S., & Strand, C.A. (2001). Using the team-learning model in a managerial accounting class: An experiment in cooperative learning. *Issues in Accounting Education*, 16(4), 549-576. DOI:10.2308/iace.2001.16.4.549
7. Kemmis, S., McTaggart, R., & Nixon, R. (1990). *The action research planner: Doing critical participatory action research*. Victoria: Deakin University.
8. Kotsopoulos, D., (2010). When collaborative is not collaborative: Supporting student learning through self-surveillance. *International Journal of Educational Research*, 49, pp. 129-140, DOI:10.1016/j.ijer.2010.11.002
9. Kramer, M.K., & Crespy, D.A. (2011). Communicating collaborative leadership. *Journal of The Leadership Quarterly*, 22(5). 1024-1037. DOI:10.1016/j.leaf.2011.07.021
10. Luthans, F., & Larsen, J.K. (1986). How managers really communicate. *Human Relations*, 39, pp. 161-178.
11. Panich, V. (2014). *Teachers for students: Creation of flipped classrooms*. Bangkok: The Siam Commercial Foundation.

12. Phumbandit, C. (2020). The development of academic achievement through 'learning together' teaching techniques for creativity and business innovation subject of Thailand 4.0. *Journal of Chandrakasemsarn*, 26(1), 61-73.  
<https://li01.tci-thaijo.org/index.php/crujournal/article/view/210736/167423>.
13. Plenjit, S. (2015). *Management skills in the 21<sup>st</sup> century of administrators in basic education schools under Nakhon Pathom Primary Educational Service Area 1*. Unpublished master's thesis. Kanchanaburi Rajabhat University.  
[http://ethesis.kru.ac.th/files/V59\\_118/Sasitra%20%20Plenjit.pdf](http://ethesis.kru.ac.th/files/V59_118/Sasitra%20%20Plenjit.pdf).
14. Poodibud, R. (2010). The development of student group behavior using cooperative learning in a statistics course. Unpublished research. Mahasarakham Rajabhat University.  
<http://fulltext.rmu.ac.th/fulltext/2553/104019/Ramnaree%20Poodibud.pdf>.
15. Redmond, K. (2016). *Indicators of 21<sup>st</sup> century leadership skills for basic education administrators*. Unpublished Ph.D. dissertation. Mahamakut Buddhist University.  
<http://phd.mbuisc.ac.th/full%20thesis/kanika.pdf>.
16. Sabaiying, W. (2018). Development of a guidance activity package to promote skills in collaboration, teamwork, and leadership among leaders of the Students' Club of Sukhothai Thammathirat Open University. *Veridian E-Journal of Silapalorn University*, (11)3, 420-422.
17. School of Public Health Science. (2017). Curriculum of Bachelor degree in Applied Thai Traditional Medicine. Subject of Thai Traditional Medicine I. Subjec code 1802233. Mae Fha Luang University.
18. Schultz, B. (1980). Communication correlates of perceived leaders. *Small Group Behavior*, 11, pp. 175-191.
19. Slavin, R.E. (1987). *Cooperative learning and cooperative school*. *Educational Leadership*, 45(3), 7-13.
20. Suhendan Er., & Ataç, B. A. (2014). The Attitudes of Students Towards Cooperative Learning in ELT Classes. *International Online Journal of Education and Teaching*, 1(2). 34-37.
21. Thinhanwong, S. (2015). Participatory learning: From theory to practice in children's literature course. *Journal of Humanities and Social Sciences Review*, 17(1), 1-11.  
[http://hs.pbru.ac.th/phocadownloadpap/hs\\_magazine/1\\_2558/1.pdf](http://hs.pbru.ac.th/phocadownloadpap/hs_magazine/1_2558/1.pdf).