

Multicultural Education

Research Article

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DEVELOPMENT OF A ENHANCING INNOVATION LEADERSHIP FOR SCHOOL ADMINISTRATORS UNDER THE PRIMARY EDUCATIONAL SERVICE AREA OFFICE

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ABSTRACT

This research was the research and development, aiming to: 1) study the components and indicators of the innovation leadership of school administrators, 2) study the current states, desirable states and priority needs in the innovation leadership of school administrators, 3) develop the innovation leadership program for school administrators, and 4) study the results of the program utilization of the innovation leadership of the school administrators. This research conduct included 4 phases as follows; Phase 1: investigating the components and indicators with the key informants of 7 peer reviewers, Phase 2: studying the current states, desirable states and priority needs, conducted with 320 samples, Phase 3: designing and evaluating the program by 7 specialists, Phase 4: utilizing the program with 12 school administrators. The research instruments contained the school administrators' innovation leadership development program with 5 modules, learning achievement test, evaluation form of learning module quality and satisfaction evaluation form. The statistics for analyzing the data comprised the percentage, mean, standard deviation, the modified priority needs index (PNI modified) and the hypothesis testing with the t-test.

The research findings indicated that: 1) the creative leadership components and indicators of the school administrators implied 4 components with 16 indicators; 2) the current states of the school administrators' innovation leadership revealed in overall were in the moderate level, the desirable states of the school administrators' innovation leadership appeared as a whole in the most level, and the priority needs on the school administrators' innovation leadership exposed with the highest values, covering vision, flexibility, reliability, success oriented and imagination respectively; 3) the developed innovation leadership program of the school administrators from 9 specialists' evaluation illustrated the program consisting of appropriateness, feasibility, and usefulness revealing in overall at the most level; 4) the results from the program utilization to develop the creative leadership of 12 school administrators were that: 4.1) the process efficiency/the output efficiency contained the mean scores equaled 91.45/82.92; 4.2) the efficiency index of the program development to develop

ARTICLE INFO

Keywords:

components, creative leadership, school administration, program development

Article History:

Received: 23rd Aug 2022

Accepted: 17th Sep 2022

Published: 29th Oct 2022

innovation leadership of the school administrators under the Primary Educational Service Area Office implied 0.6204 or 62.04%; 4.3) the school administrators had the learning achievement after learning higher than before learning at the statistical significance at .01 level; 4.4) the school administrators developed had the learning retention after 2-week learning in average indifferently; and 4.5) the school administrators developed were satisfied in overall in the most level.

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1. INTRODUCTION

Education plays an important role in the establishment and preparation of the national youths into the real world, and it is the major mechanism in the development, promotion and establishment in the conceptual knowledge for overall citizens and societies in every country. For this reason, the educational design becomes an essential joint of the nation development in every aspect involving human and society (Office of the Education Council: ONEC, 2014).

Hence, current leaders always seek new and better things to create the new challenge and how to achieve it. This bases on learning from experiences without disheartened thoughts and failure, and the determination focused on the information and participation of colleagues. For this reason, the leaders with fulfilment are based on individuals to respond the changes effectively and can pro-actively drive to those changes. Inevitably, leaders have to be creative due to the rapid change influence, so they have to continually think creatively. Specialists in the modern age view that creative thinking becomes an important skill of the leaders of change agents, bringing opportunities and challenges. In this point, leaders have to imagine in creating the management for encountering those challenges and seizing those opportunities (Heifetz and Linsky, 2009). For the earlier mentioned point, it is relevant to Pongsriwat's (2010) idea, stating that for the education as the instrument for producing and creating new products caused from leaders' thoughts and intelligence, it is important that school administrators should have the creative leadership in order to create the developmental model, and the imaginative product can be essential in the study on the leadership in terms of the research in the conceptual model with the process for the leadership development model.

Thailand's education in the last century was impacted by the world change flows according to the communicative technology advancement, especially, the rapidly connected informational technology, causing the new world order. This change could influence the societies, economy, politics and international relationship, so every country as well as Thailand has to enter newly modern world, and the educational management has been managed under the National Education Act B.E. 2542 (1999) and Amendments (Second National Education Act .B.E. 2545 (2002), indicating that the educational management has to be managed for Thai people development. This aimed for the complete humans with physical, mental, intellectual statuses, and knowledge together with moral and ethical, cultural living, enabling to live with others happily. However, Thai education has been focused on lifelong education for people' participation in the educational management to develop learning continually. This intention aims to improve learners' goodness, mastering, happiness and desirable characteristics, regulated in the National Act, Section 22, emphasizing on every learner's the most importance. Finally, the educational management process intends to promote the learners capable for the natural development at full potentials (Office of Basic Education Commission, 2010). For the guidelines in the administrators' management affecting to the organization working with efficiencies, Chantarasombat (2018, 2019, 2020, 2022) and Luecha, Chantarasombat & Sirisuthi were studied the creative leadership, enhancing innovation leadership, program learning for administrators, and it implied that the creative leadership comprised 5 important components including: 1) proactive, 2) innovative, participative, 4) positive and 5) adaptive leaders. For this point, it was relevant to Stoll and Temperley's (2009) study and pointed out conclusively that the creative leadership became the response of the imaginative thinking towards different opportunities with challenging, and it concerned different thinking and acting to implement the individual concerned.

Besides, from Guntern (2004) working as the leadership and creativeness in the executive position of the consultant, the chairman of International Creando Symposium on Creative Leadership, he summarized the creative leadership components covering: 1) inspiration, 2) vision, 3) intelligence, and 4) trustfulness. This concept was similar to Harris, working as a professor in the educational institution in London University, viewing that the creative leadership was not the trait but it was the act influencing in the changes. Also, his concept included the creative leadership components as the followings: 1) flexibility and 2) challenging. Except from this, Sinlarat

(2020) viewed that the creative leadership components contained: 1) analytical thinking, 2) leading changes, and 3) imagination.

To act the developmental work and the educational management policy apparently with full potential and to achieve the educational management goals and objectives, creative leadership, enhancing innovation leadership, policy strategic plan, the Primary Educational Service Area Office had to develop the creative thinking for the personnel acting in the educational management to be ready in the development of more effectively administrative potentials. For the earlier point, the school administrators became more essential in the compulsorily educational management, especially in the creative leadership. Necessarily, the school administrators have to engage in wide visions, and the morality and ethics, facilitating the publicity, responding to the needs of organizations and nation in both the current time and future. For this reason, it can influence to the fulfilment of the organizational targets. Inevitably, the school administrators have to regulate the directions in the compulsorily educational management more effectively in the basic education development.

From the earlier concept in the creative leadership, it became extremely important in the educational management. Therefore, the researcher seemed to be interested in the research and development for the program development to enhance the school administrators' Enhancing Innovation leadership under the Primary Educational Service Area Office in order to find some important issues traceable to develop the school administrators' enhancing leadership for the administrative potentials more effectively.

2. BACKGROUND

These results are also supported by Donbund (2018). who found the overall posttest learning performance was significantly higher than the pretest ($p < .01$). Moreover, the mean value of learning score in each aspect, including the learning achievement, scientific process skill, and critical thinking ability after trying out the module, was significantly higher than the cutting point at .01 level.

In first semester 1, 2020, we had started the learning module for doctoral students in Educational Administration and Leadership at Northeastern University, Khon Kaen, Thailand, by studying elements and factors including the current and desirable condition of Thai learning management in enhancing the critical The authors' study in "The Development of Innovation for Improving the Learning Achievement of Schools, under the jurisdiction of Nakon Panom Primary Educational Service Area Office 2" (Chantarasombat, Udombunyanupap, & Songsri, 2018), by applying the approach/theory of supervision, the Route to Excellence and Coaching and four learning modules. The project participants included teachers, school supervisors, and administrators. The mean value of efficiency was 90.69/81.02, which was higher than the specified criterion of 80/80. The mean value of post-test efficiency was significantly higher than the pretest at .01 level. The effectiveness index of development was 0.7480. This indicated that the trainees obtained 74.80% of additional knowledge. As a result, the learning community was developed in both classroom and school levels. Teamwork, cooperative participation, and a learning network were successfully achieved through action learning. Teachers were confident, group relationships were developed, and the participants supported each. The overall mean value of satisfaction on the improvement of teachers, school administrators, and supervisors was 4.60. The satisfaction of the learning module was at "The Highest" level. The findings were consistent with Charoenpong's (2012) work. This author's research findings showed that the post-test scores after learning through the learning module Engineering Mechanics for High Vocational Certificate Qualification were significantly higher than the pretest at .05 level. The highest level of students' satisfaction was in the enhancement of creative thinking. thinking of the secondary school teachers before creating the program by using google classroom technique for critical Comparative analysis of Thai education management Global and regional society (Chantarasombat & Sombatsakulkit, 2021), Sirisuthi & Chantarasombat (2021), Chantarasombat, Sombatsakulkit & Chaikiran (2021), Luecha, Chantarasombat & Sirisuthi (2022) Chantarasombat (2022) and Boonkear, Chantarasombat & Chusorn (2022). We used 7 experts and 2 pre-test groups who were not our research population to evaluate our module. Their feedback had been used to develop the module for improving learning and teaching focusing on participating between teachers, administrators, and academic persons before offering the module to the doctoral students. Therefore, the researcher is interested in developing a module for lifelong learning and 24 hours a day for school director in program by applying the software package because it wants learners to learn with real practice, according to the jointly planned program.

There is learning with both learners, teachers, learning resources, and research in the classroom as well. In order to summarize the lesson and extend the results at the graduate level.

RESEARCH QUESTIONS

The research was conducted in the area of the Primary Educational Service Area Office with the following procedures:

1. What were the components and indicators in the creative leadership of the school administrators?
2. How were the current states, desirable states and needs in the creative leadership of school administrators?
3. What should the program developed of the creative leadership of school administrators?
4. How were the utilizing results of the program developed of the creative leadership of school administrators?

RESEARCH OBJECTIVES

This investigation aimed to conduct within the area of the Primary Educational Service Area Office based on these issues:

1. To study the components and indicators in the creative leadership of school administrators,
2. To study the current states, desirable states and priority needs in the creative leadership of school administrators,
3. To develop the creative leadership program of school administrators, and
4. To study the results from utilizing the creative leadership program of school administrators.

SCOPE OF RESEARCH

1. Population and Samples

1.1 The population comprised 1,157 school administrators and 1,132 School directors working as the head of academic affairs, totally 320 cases from 23 schools in the northeastern region under the Office of Basic Commission in 2021 Academic Year.

1.2 In actual practice, the samples included the key informants with 320 school administrators and working as the head of academic affairs, totally 320 cases from the schools in the northeastern region in 2021 Academic Year.

2. Variables of Research

2.1 Independent variables, covering:

- 1) the school administrators' creative leadership in 5 components and 15 indicators,
- 2) the creative leadership program developed of school administrators,

2.2 Dependent variables, e.g.,

1) the results from studying 5 components and 15 indicators of the school administrators' creative leadership, and

2) the efficiency and effectiveness of utilizing the creative leadership program, covering E1/E2 and the index effectiveness, E.I., learning retention and the users' satisfaction of the administrators' creative leadership program.

RESEARCH METHODOLOGY

This investigation contained the practical procedures in 4 phases as follows:

Phase 1: studying components and indicators of school administrators' creative leadership;

Phase 2: studying the current states, desirable states and priority needs in the school administrators' creative leadership;

Phase 3: creating and developing the school administrators' creative leadership program; and

Phase 4: studying the effects from utilizing the school administrators' creative leadership program.

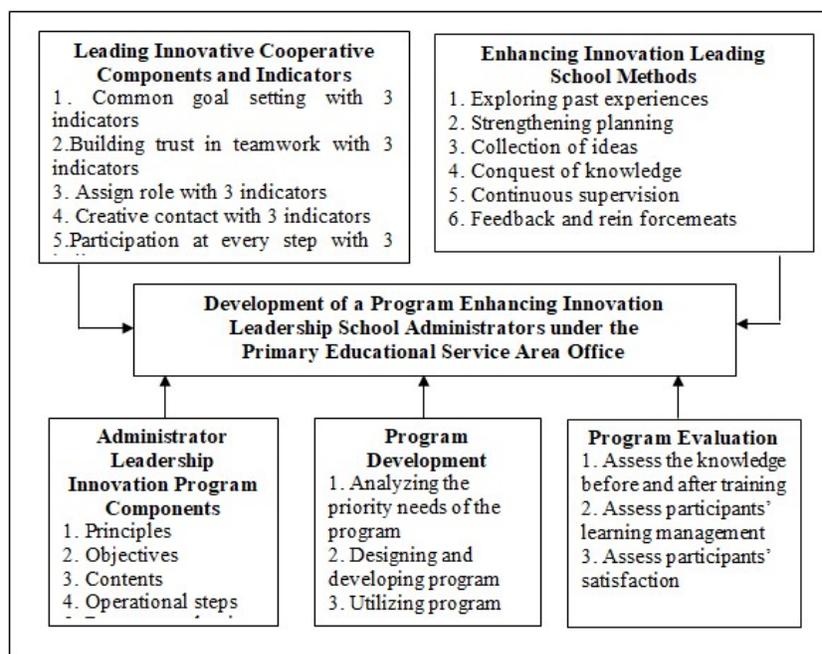
INVESTIGATION DURATION

It was conducted from May 2022 to October 2022.

CONCEPTUAL FRAMEWORK

From earlier discussion, this investigation conceptual framework Enhancing Innovation leadership illustrates as follows: 1) Exploring past experiences components and indicators, 2) program components, 3) leadership development methods, 4) program development, and 5) program utilization evaluation by Luecha, Chantarasombat & Sirisuthi (2022) The concept can be illustrated in Figure 1:

Figure 1: Conceptual framework of research



RESEARCH METHODOLOGY

The research procedures of the program development of administrators' Enhancing Innovation Leadership under the Primary Educational Service Area Office are shown as subsequent details:

Phase 1: Studying the creative leadership components and indicators

1. Operational steps were to:

1.1 study and analyze the concepts, theories from different kinds of documents and related literature in the creative leadership;

1.2 synthesize the information from No.1.1 action to find the components and indicators; and

1.3 check the component and indicator appropriateness of the creative leadership by peer reviewers.

2. Key informants

This group consisted of 5 peer reviewers to check and confirm the school administrators' creative leadership components and indicators, selected by the purposive random sampling.

3. The methods of the construction and quality assessment of the instruments were to: 1) study principles and construction methods, 2) construct the questionnaires of components and indicators, 3) bring the constructed questionnaires to check the correctness and appropriateness by the thesis advisors and get it corrected as suggestions, 4) assess the content validity by the peer reviewers using the Index of Consistency: IOC. The calculative results to appropriately choose appeared from 0.50 and upper (Srisa-ard, Boonchom, 2011). From the calculative procedure, the IOC values appeared the consistent values between 0.80 – 1.00.

Phase 2: Studying the current states, desirable states and priority needs in the creative leadership of school administrators

1. Operational steps, were to:

1.1 bring the results from Step 1: components and indicators of the creative leadership to construct the questionnaires to study the current states and desirable states,

1.2 collect the data from sample groups,

1.3 analyze the current states, desirable states and priority needs in the creative leadership of school administrators.

2. Key informants

2.1 Population included 1,517 school administrators and 1,132 working the head of academic affairs, totally 320 cases, working in under Khon Kaen Primary Educational Service Area Office, in 2021 Academic Year.

2.2 Sample groups consisted of 320 school administrators working the head of academic affairs, totally 320 cases, working in schools, selected from Krejcie and Morgan's packaged table (Krejcie and Morgan, 1986, cited from Srisa-ard, Boonchom) at the error estimation of 0.05 using the simple random sampling.

3. The construction method and quality assessment of the instruments were to: 1) study the principles and how to construct, 2) construct the questionnaires, 3) check the questionnaires for the correctness and appropriateness by thesis advisors for the suggestions to correctly follow, 4) check the content validity by the peer reviewers and the Index of Consistency: IOC value, exposing 0.80-1.00 (Srisa-ard, Boonchom, 2011), 5) try out the questionnaires with 30 school administrators, excluding the actual samples, finding the current states in the little level ($\bar{X} = 2.52$, S.D.=0.32), and the desirable states in overall at the most level ($\bar{X} = 4.69$, S.D.=0.37), 6) check the questionnaire reliability with Cronbach's Alpha Co-efficient, valued 0.94.

Phase 3: Constructing and developing the creative leadership program for school administrators

1. Operational steps, were to:

1.1 bring the data from Phase 1 – 2 and the evaluative results from the priority needs Index = PNI_{modified}) to review to use for the data to draft the creative leadership program in terms of the correctness and appropriateness, covering the structure relating the contents, activities and overall completeness,

1.2 interview school administrators with the best practices, guided to develop the creative leadership, selected by the purposive random sampling from the school administrators with the digital performance and work excellence to be 5 key informants as the specialists in the focus group discussion focusing on the administrators' creative leadership,

2. draft the creative leadership program of school administrators, containing: 1) principles, 2) objectives, 3) contents with 5 modules, comprising: Module 1: imagination, Module 2: flexibility, Module 3: trust, Module 4: vision, Module 5: success; 4) methods: 4.1) learning activities, 4.2) methods in leader development, 4.3) media/learning sources; 5) program evaluation, including 5 phases, covering: Phase 1: before learning evaluation, Phase 2: during learning evaluation, Phase 3: after learning evaluation,

3. Draft the program utilizing manual of the administrators' creative leadership, including the following steps:

3.1 to study the concepts, theories and related literature,

3.2 to draft the program manual in utilizing the creative leadership for the appropriateness, feasibility and usefulness with 5 modules, consisting of the subsequent details: 1) directions, 2) objectives, 3) creative leadership development model, 4) material preparation, 5) knowledge and activity contents, 6) worksheet and practice, 7) measurement and evaluation, and 8) references.

4. have the draft of the manual program rechecked by the thesis advisors and got it re-improved,

5. get the program manual checked by 9 specialists for the recommendations for more improvement.

6. construction methods and quality assessment of instruments, following these steps to: 1) study principles and methods, 2) design the interview form, focus group discussion form and program evaluation with manual, 3) get the instruments rechecked by thesis advisors for more suggestions, 4) have 9 specialists check the content with the IOC: Index of consistency value, implying the values between 0.80-1.00 (Srisa-ard, Boonchom, 2011).

Phase 4: Studying the program utilizing results of the creative leadership of administrators

The program and program manual, checked by the specialists contained the utilizing steps, i.e.:

1. The sample groups for using the program contained 9 school administrators from the schools in Kudyom District and Nongkhonthai District under Nakohn Nayok Primary Educational Service Area Office, derived by the purposive random sampling.

2. The research instruments included:

2.1 The test of the administrators' creative leadership before and after the development constructed contained 45 items with 4-multiple choices, checked by 7 specialists to evaluate the content validity of 30 items with IOC: Index of Consistency value between 0.80-1.00 and the difficulty (p) values between 0.40-0.80, and the discrimination value (r) between 0.30-0.80. In overall, the reliability value of the test was calculated with the KR-20 formular and revealed at 0.84.

2.2 The evaluation form of the creative leadership level before and after the development was checked by the specialists for its content validity, IOC (Index of Consistency), valued between 0.80-1.00. Then, it was tried out with 30 administrators, excluding sample group to find the reliability value with Cronbach's Alpha Co-efficient,

2.3 The creative leadership development program of school administrators included 5 modules.

2.4 The participants' satisfaction assessment form was proved by 7 specialists to check the appropriateness, covering the IOC (Index of Consistency), valued 0.80-1.00, re-correct and try out with 30 administrators, excluded sample group. From 30 items in the questionnaires, the discriminative values revealed between 0.35-0.80, and the reliability value with KR-20 (Kuder Richardson) formula indicated 0.92.

3. DATA COLLECTION

This procedure meant to:

1. collect the data in the theoretical knowledge in testing before and after learning with the learning achievement test,
2. collect the data during developing the program for school administrators' creative leadership,
3. collect the data in terms of efficiency, effectiveness and learning retention after 2-week learning management,
4. collect the data of the satisfaction with the questionnaires towards the creative leadership development.

4. DATA ANALYSIS

In this procedure, it aimed to:

1. analyze the component and indicator appropriateness with 5 peer reviewers,
2. analyze the current states, desirable states and priority needs in the creative leadership from the sample groups of 97 school administrators and 97 teachers working as the head of academic affairs, totally 194 cases,
3. analyze the efficiency criterion of E1/E2 as 80/80 setting criterion, and the effectiveness (E.I.) (Brahmawong, Chaiyong, 2010) for participants' learning achievement.
4. find the difference of learning achievement between before and after learning with the t-test (Dependent sample) (Srisa-ard, Boonchom, 2011) at the statistical significance of .01 level.
5. find the learning retention from the creative leadership program with the t-test (Dependent sample) of the last test and the 2-week retest and compare as in No. 4 step,
6. analyze the participants' satisfaction with the statistical technique using the percentage, mean and standard deviation as Likert's scale principle (Srisa-ard, 2011).

5. SUMMARY OF RESEARCH FINDINGS

After the earlier procedural discussion, the development of the enhancing innovation leadership program of the school administrators under the Primary Educational Service Area Office conclusively showed as follows:

1. The study on the components and indicators of the school administrators' innovation leadership implied that:

1.1 The creative leadership of school administrators included 5 components and 15 indicators.

1.2 In the appropriateness of the components and indicators in the innovation leadership evaluated by 5 peer reviewers, it appeared at the most level.

2. The study on the current states, desirable states and priority needs in the school administrators' innovation leadership exposed that the current states revealed in overall at the moderate level; the desirable states appeared in overall at the most level; and the priority needs in the development of the school administrators' innovation leadership implied in the most level in the aspects of vision, flexibility, trust, success and imagination respectively.

3. The results from the program development of the administrators' enhancing innovation leadership, creative leadership conclusively showed as follows: 1) program components, 2) activity contents in developing

the program covering 5 modules, 3) developmental methods, and 4) evaluation. Besides, 9 specialists evaluated the program and found the appropriateness, feasibility and usefulness in overall at the most level.

4. The result study of the program development in the school administrators' enhancing Innovation leadership summarily illustrated, i.e.,

4.1 The Research Results of the Module and Its Achievement

The research results of the module and its achievement illustrate in Table 1:

Table 1: Process efficiency vs. effectiveness of results for developing knowledge managers in leader administrators in enhancing Innovation leadership, thinking for enhancing school administrators

Number	Score after 2 weeks)60)	Pre-test (60)	Practical Score for program						Post-test (60)	
			Survey/former)40)	Develop Creative (20)	Applying of Thinking (20)	Practice (20)	Supervision (20)	Feedback/seminar)40(Total practical (160)
1.	57	34	37	18	18	18	18	37	146	50
2.	58	30	37	18	18	18	18	38	147	50
3.	59	34	37	18	18	18	18	38	147	52
4.	58	28	37	18	17	18	17	38	145	50
5.	60	28	37	18	17	17	18	38	145	51
6.	60	26	38	17	18	18	17	38	146	50
7.	58	27	38	18	18	18	17	38	147	48
8.	58	29	38	17	17	18	18	37	145	47
9.	58	52	37	18	18	18	18	38	147	50
10.	57	24	38	17	18	18	18	38	147	45
11.	60	42	38	17	17	18	18	38	146	49
12.	60	45	38	18	18	18	18	38	148	55
Total	645	396	450	212	217	215	213	454	1,756	597
	53.75	33.00	37.50	17.67	17.67	17.92	17.75	37.83	146.33	49.75
S.D.	1.71	3.96	0.52	0.45	0.45	0.34	0.45	0.44	1.21	1.85
%	89.58	55.00	93.75	88.33	88.33	89.58	88.75	94.58	91.45	82.92

From Table 1, it indicated the results of the efficiency evaluation of the process and the efficiency results of the development of learning resource leaders in planting wild mustard greens. The overall efficiency of the process revealed 91.45/82.92 higher than the criteria set at 80/80, and the program effectiveness index was at 0.6204, pointing out the resource leader's higher knowledge at 62.04%.

4.2 The learning achievement on the online learning program using Google classroom, compared between the pre- and post-test in the course of enhancing Innovation leadership program, it illustrates in Table 2:

Table 2: Comparison of learning achievement on online learning program using Google classroom, course: ED41306 (Educational Policy and Strategic Plan Development)

Test	Amounts of Students (Ph.D.)	(Total60 Scores)	Standard Deviation (SD)	t	Sig
Pretest	12	33.00	3.96	7.925	0.01**
Posttest	12	49.75	1.85		

Sig, 0.01

From Table 2, it found that after learning through the online learning program by using Google classroom, of Course: ED41306 (Educational Policy and Strategic Plan Development), the post-test scores were higher than of the pre-test scores at the statistical significance at 0.01 level.

To assure the efficiency of the learning achievement, the second post-test was to compare with the first post-test as in Table 3

Table 3: Comparison of learning achievement on online learning program using Google classroom, Course: ED41306 (Critical Comparative Analysis of Education Management)

Test	Amounts of Students (Ph.D.)	(Total60 Scores)	Standard Deviation (SD)	t	Sig
Test1 (Having a posttest after learning)	12	49.75	1.85	5.962	0.01**
Test2 (Having a second posttest after the first posttest for 2 weeks)	12	53.75	1.85		

Sig, 0.01

From Table 3, the second posttest after learning through the online learning program using Module (Enhancing Innovation leadership school Administrators) was higher than the first posttest at the statistical significance at 0.01 level, implying the school directors' learning retention and this tending the development of learning.

4.3 The after taking consideration into each aspect, the school directors' satisfaction towards lecturers and support, the learning indicators covered: 1) contents, 2) theory in teaching skill, 3) school directors' skill of practical teachers, 4) teacher characteristics, 5) relationship between teachers and school directors', 6) learning support, 7) assessment and evaluation, and 8) in summary, the satisfaction towards school directors' practices in teaching and learning conclusively illustrates major indicator points as in Table 4:

Table 4: School directors' satisfaction towards teachers' practices in teaching and learning from learning program

Learning indicators	Teaching assessment components	Satisfaction Scores		Interpretation Levels
		\bar{X}	S.D.	
1. Contents	Total mean scores from 2 questionnaire items	4.91	0.50	The most
2. Theory in teaching skill	Total mean scores from 9 questionnaire items	4.78	0.42	The most
3. Teaching skills of practical school administrators	Total mean scores from 7 questionnaire items	4.88	0.40	The Most
4. Teacher characteristics	Total mean scores from 7 questionnaire items	4.66	0.50	The most
5. Relationship between teachers and school administrators	Total mean scores from 7 questionnaire items	4.94	0.24	The most
6. Learning support	Total mean scores from 6 questionnaire items	4.97	0.11	The Most
7. Assessment and evaluation	Total mean scores from 6 questionnaire items	4.93	0.13	The Most
8. In summary, the school administrators are efficient and effective in teaching and learning.		5.00	0.00	The most
Overall total from 7 indicators		4.92	0.14	The most

From Table 4, it shows the School administrators' satisfaction results of the teaching quality and teachers' support in the Module (Enhancing Innovation leadership school Administrators): internal supervision in the Semester 1, 2022 Academic Year, revealing the overall satisfaction of at the most level ($\bar{X}=4.92$, S.D.=0.14). Also, there were some suggestions, strengths, innovation, learning, lessons, modules on the internal supervision in the school, resulting in the new knowledge for the application in the local context. Additionally, efficiency of the learning module program indicated as follows:

1) The learning program contained the efficiency of the learning outcome process of E1 / E2 at the ration scores of 91.56/84.17 higher than the setting criterion at 80/80.

2)The effectiveness index for the program was at 0.6204, explaining that students gained higher knowledge at 62.04 %.

3) The students learning with the module gained their learning post-test scores higher than the pre-test scores at the statistically significant level of .01. Besides, after teaching, their learning retention data showed the students'

indifferent scores from the posttest, and after 2 weeks of teaching, it indicated students' learning retention scores implying the stable module.

4) The students' satisfaction from the module was at the most level ($\bar{X}=4.56$, $SD=0.42$) with the highest level of mean values, ranking from high to low, as follows:

- Lecturing and providing the learning activity management by lecturer and students.
- The satisfaction towards the higher-order of the educational supervision technique was in "the most" level ($\bar{X}=5.00$, $SD=0.00$).
- The satisfaction towards the enhancement for student support system was in "the most" level ($\bar{X}=4.92$, $S.D.=0.36$).
- Finally, the satisfaction towards the supervision network construction for lecturing and practicing was in "the most" level ($\bar{X}=4.82$, $SD=0.34$).

6. DISCUSSIONS

From the investigative results from the program development of the school administrators' creative leadership, the discussions could identify respectively:

1. The creative leadership of school administrators under the Primary Educational Service Area Office included 5 components, containing: 1) imagination, 2) flexibility, 3) reliability, 4) vision, and 5) success. In this point, it was related to the concepts of Couto and Eken (2002), Sousa (2003), Guntern (2004), Parker and Begnaud (2004), Palus and Horth (2005), Casse and Claudel (2007), Ruth and other (2007), Danner (2008), Herris (2009), Stoll and Temperley (2009), Horth and Buchner (2009), Coste (2009), Delich (2010), Ubben Hughes and Norris (2011), Sinlarat, (2010), Kitkarn (2012), Pimkor (2014), Sankaburanurak (2016), Patika (2017), Worachin (2016), and Juengsuttiwong (2020). The concepts mentioned became the theoretical framework with the creative leadership components and indicators checked by peer reviewers, finding the appropriateness in the most level in every component and indicator. The stated reason was relevant to Worachin's study, investigating the creative leadership development model of the school administrators under the Secondary Educational Service Area Office 24, including 6 traits, including being: 1) persons with creative thinking, 2) leaders learning in teams, 3) leaders of leaders, 4) leaders focusing on customers or service receivers, 5) leaders emphasizing on the work achievement, and 6) leaders of good examples.

2. For the current states, desirable states and priority needs of school administrations the results of the current states appeared in overall at the moderate level; the desirable states were in overall at the most level; and the priority needs exposed in overall at the most level. The mentioned point was related to Pimkor's study, investigating the program development to support the creative leadership of school administrators under Local Government Organization, finding that school directors', deputy directors' and heads' of school academic affairs viewed towards the current states of administrators' creative leadership and revealed in the little level; but the desirable states of administrators' creative leadership exposed in the much level. Besides, the finding in this point was also relevant to Payothon's investigation, indicating that the program development to support the effective leadership for primary administrators in the secondary schools. It found that the current states implied in overall at the moderate level, and the desirable states revealed as a whole in the most level. Eventually, the study of Pakika implied that the current states of school administrators' creative leadership with the program development to support, pointed out as a whole in the much level, while the desirable states appeared in overall at the most level.

3. The program for the creative leadership development of school administrators contained the process efficiency/output effectiveness with the percentage mean equaled 94.60/92.00 higher than the setting criterion of 80/80. In this issue, it was correlated to the study of Chantarasombat, and Meekhamthong's (2019). It investigated the program development for the leader teachers of Thai language learning management for enhancing the secondary school students' critical thinking in the course of seminar in educational administration for master degree students in educational administration. It reported that the program contents and activities developed had the process efficiency and output effectiveness equaled 85.67 (E1)/84.00 (E2) higher than 80/80 setting criterion. For this, it was relevant to Chantarasombat's (2020) research, reporting the teacher development program in Thai language learning development to enhance secondary school students' critical thinking. It showed that the learning module consisted of the efficiency criterion of 84.61/83.00, higher than the setting criterion. Similarly, the finding discussed was also consistent with Chantarasombat and Sirisuthi's (2022) report in the learning module development for the internal supervision in schools for students, resulting that the learning modules were effective

process equaled 87.69 and the product efficiency equaled 83.03, higher than the setting criterion of 80/80. And in accordance with the finding discussed was also consistent with Chantarasombat and Chusorn's (2022) report in the learning module development for the internal supervision in research and program development and demonstration in schools for students, resulting that the learning modules were effective process equaled 91.56 and the product efficiency equaled 84.17, higher than the setting criterion of 80/80.

4. The effectiveness index from developing the Enhancing Innovation leadership program for school directors under the Primary Educational Service Area Office, it showed higher scores than before developing, equaled 0.6204 or 62.04%, relevant to Chantarasombat, Udomboonyanupab and Songsri's research report of the innovation development to improve learning achievement level of the schools under Nakhon Panom Primary Educational Service Area Office 2, finding the index effectiveness after learning higher than before training, valued 0.7480, meant that the increasing scores valued 74.80%, and correlating to Chantarasombat and Meekhamtong's (2020) report, indicating that the teacher development program for Thai language learning management to enhance students' critical thinking found the effectiveness after learning higher than before learning, valued 0.7567, meant that the knowledge increased 75.67%. And in accordance with the finding discussed was also consistent with Chantarasombat and Chusorn's (2022) report in the learning module development for the internal supervision in research and program development and demonstration in schools for students, resulting that the learning modules were effective after learning higher than before training valued 0.7679, mean that the knowledge increased 76.79.

5. The school administrators learning by using the creative leadership development program of school administrators under the Primary Educational Service Area Office, possessed the achievement after learning higher than before learning at the statistical significance of .01 level. This point could related to Dechakupt's (2011) concept, mentioning that learning and teaching based on learner-centered technique can affect for creating new knowledge and new inventions using the intellectual and social or group processes in order to encourage learners to interact and participate in learning and teaching, and be able to apply for uses. Besides, the earlier finding could be correlated to Pimkor's report illustrating the program development to enhance the teachers' creative leadership of school administrators under Local Government Organization. It found that analyzing the median scores of after using the creative leadership program appeared higher than the score before using the program at the statistical significance of .01 level. Additionally, the mentioned point was related to Kaklong's study, reporting the program development to improve the service leadership of basic educational administrators, resulting that the comparison of the service leadership of the participants in the development between the self-evaluation and evaluation by the committee disclosed the service leadership level after developing higher than before developing at the statistical significance of .01 level. This could be consistent with Chantarasombat and Meekhamtong's study, reporting the program development for developing leader teachers of Thai language learning management to enhance the secondary school students' critical thinking. It disclosed the students' learning achievement after learning higher with the statistical significance of .01 level, and also found that the students had higher learning achievement after learning at the statistical significance of the 0.05 level. Finally, it was related to Chantarasombat and Sirisuthi's (2022) report in the learning module development, entitled, internal supervision in schools for students of R&D research, and the report implied that the students possessed the learning achievement in the internal supervision in schools after learning higher than before learning at the statistical significance of 0.05 level.

6. Moreover, the finding this research also illustrated that the school administrators participating in this developmental program of creative leadership had the 2-week test of learning achievement and the learning achievement after learning indifferently. This issue showed that the developmental participants had the learning retention from this project. As Adams (1967) stated that learning retention, ability in retaining or awareness in the stimulus experienced after any durations was caused from learning or developmental activities they participated, encouraging the target learning. This concept was related to Chantarasombat and Meekhamtong's (2019) study, reporting in the program development for leader teachers of Thai language learning management for enhancing secondary school students' critical thinking, indicating that in checking the program developed, the quality evaluation of learning achievement test, after-working notes, it found the students with indifferent learning achievement and the achievement after 2-week learning. This meant that the students had got their learning retention through the program developed, related to Dechakupt's (2011) concept in learning based on learner centered approach encouraging learners to create new knowledge and new inventions by using intellectual process or thinking process and social process. This kind of learning could make learners to participate, interact in learning process and could apply their experiences to actually use.

7. Finally, the result from this research showed that the participants felt satisfied towards the program development of the Enhancing Innovation leadership in overall at the most level. This point was correlated to

Patika's (2017) study, indicating the program development to enhance the creative leadership for school teachers, exposing the satisfaction evaluation in the most level. Also, it was related to Payothon's study in the program development to enhance effective leaders for primary administrators in secondary schools, implying that the participants were satisfied toward the program development in the most level. Finally, it was correlated to Chantarasombat and Meeckhamthong's (2019), Chantarasombat & Sirisuthi's (2020) report of the program development for leader teachers of Thai language learning management to supplement students' critical thinking in the secondary schools, and it reported that the students as the program participants were satisfied towards the learning program in the most level. Eventually, it also related to Chantarasombat and Chusorn's (2022), Luecha, Chantarasombat & Sirisuthi (2022), Boonkear, Chantarasombat & Chusorn (2022) study in the report of the program development for leader teachers and school administrators of Thai language learning management to enhance students' critical thinking in the secondary schools under the Office of Basic Education Commission, and it reported that the teachers as the participants were satisfied towards the learning program development in the much level., and when looking into in each aspect with the most level of satisfaction, it disclosed the program development relevant to the objectives with the contents covering the critical thinking development activities, and the teacher participants were satisfied in the most level.

7. RECOMMENDATIONS

This topic contains two issues in the recommendation for the development and future investigation as follows:

Recommendation for development

From the report of the program development of the Enhancing Innovation leadership for school administrators under the Primary Educational Service Area Office, the recommendations imply that:

1. Following to learning with the program development in the creative leadership of school administrators, the administrators could apply the knowledge for the self-development in working effectively.
2. Due to learning with the program development of the Enhancing Innovation leadership of school administrators, there should have been the curriculum development of the creative leadership for administrator training continually affecting to the maximum success of organizations.
3. The Enhancing Innovation leadership development of school administrators became important for each department concerned, so there should have been the encouragement for school administrators to cooperatively plan and promote utilizing the creative leadership program more widely so as to establish knowledge, skills, techniques and creative thinking to fulfil working as educational targets.

Recommendation for future investigation

1. There should be the research and development using the Enhancing Innovation leadership development program or module learning in other sectors to bring the findings in terms of similarity and differences to confirm more reliability of using the program.
2. There should be the investigation in learning with the program or learning modules to utilize in other educational sectors to derive creative knowledge for school administrators traceable for the educational quality development and to raise the working quality level of educational offices effectively.
3. The authors suggest the development of learning modules be applied at the graduate school level and doctoral degree program in Educational Management and Leadership, in order to support the development of creative thinking and 21st-century innovations to the Enhancing Innovation leadership for school administrators.

Acknowledge

The authors would like to express their appreciation to the President, Vice President academy, Dean of the Faculty of Education, Northeastern University for providing, promoting the development and potentiality of the academics of the Doctoral Degree Program in Educational Administration, Leadership and School Administrators under the Primary Educational Service Area Office, and my family Sunet's Thongpo.

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