CHAPTER 4

Results

This research aimed to develop a career education model for highland and remote area schools, for which the analysis results are presented as follows.

Part 1: The research results of general conditions, problems, and management methods of education for career of highland and remote area schools which consist of.

1.1 Basic information of the questionnaire correspondents.

1.2 Basic information of career education for highland area schools.

1.3 General conditions and problems of career education for highland and remote area schools.

1.4 Methods for career education for highland and remote area schools.

Part 2: The research results of the model of basic education management for career education of the schools that had good performance.

2.1 The analysis results of information concerning concepts, principles, objectives, related factors, strategies, procedures, and management methods of career education of the schools that had good performance.

Part 3: The results of creation and development of the career education model for highland and remote area schools.

3.1 The results of creation of the career education model for highland and remote area schools.

3.2 The results of quality monitoring of the career education model for highland and remote area schools.

Part 4: The experimental results of applying the career education model for highland and remote area schools.

4.1 Basic information of the schools that applied the career education model for highland and remote areas as an experiment.

4.2 The comparison of the results of performance and satisfaction levels of the administrators and teachers toward the application of career education model for highland and remote areas schools, before and after the experiment.

4.3 The satisfaction of the school administrators and teachers who applied the career education model toward the learners' quality, which resulted from the provision of career education for highland and remote area schools after the experiment.

4.4 The satisfaction of the school commissioners toward career education for highland and remote area school after the experiment.

4.5 The performance of students which resulted from the provision of career education for highland and remote area schools.

Part 5: The results of lesson visualization using the career education model for highland and remote area schools.

4.1 Part 1: The research results of general conditions, problems, and management methods of career education for highland and remote area schools.

1.1 Basic information of the questionnaire correspondents

The population used in this research was the administrators and teachers from highland and remote area schools under the Office of Basic Education Commission for 1,343 schools from 24 educational service areas according to the announced list from the Office of Basic Education Commission, which contains general information of the questionnaire correspondents, including gender, age, role and duty, period of time working in the school, and educational degree. The data was analyzed using frequency distribution and percentage, and it is presented in the form of a table with a description as shown in table 4.1.

Table 4 . 1 Frequency and percentage of the basic information of the questionnaire correspondents

Basic Information	Amount	Percentage
1. Gender		
Male	183	49.60
Female	186	50.40
2. Age		
lower than 30 years old	87	23.58
30 – 40 years old	131	35.50
41 – 50 years old	61	16.53
51 – 60 years old	90	24.39
3. Role and duty of work		
Administrators	133	36.04
Heads of academic department	66	17.89
Basic career teachers	170	46.07
4. Work period at schools		
1 – 3 years	219	59.35
4 – 6 years	68	18.43
7 – 9 years	29	7.86
10 years up	53	14.36
5. Highest educational degree		
Lower than bachelor's degree	-	-
Bachelor's degree	212	57.45
Master's degree	150	40.65
Doctorate degree	7	1.90

From Table 4.1, most of the questionnaire correspondents are females (50.40 %) aged from 30 – 40 years old (35.50 %), their roles and duties are basic career school teachers (46.07 %), their work periods at schools are from 1- 3 years (59.35 %), and their educational degrees are bachelor's degrees (57.45 %).

1.2 Basic information of career education for highland and remote area schools

Basic information of career education for highland and remote area schools are conditions of class arrangement for career education and course curriculum arrangement, using frequency distribution and percentage as appears in table 4.2

Table 4.2 Frequency and percentage of the basic information of career education for highland and remote area schools

Basic information of career education	Amount	Percentage
1. Basic information of schools Classes on offer		
Kindergarten – Prathomsuksa 6	172	46.61
Kindergarten – Matthayomsuksa 3	148	40.11
Prathomsuksa 1-6	22	5.96
Prathomsuksa 1 to Matthayomsuksa 3	18	4.88
Kindergarten – Matthayomsuksa 6	9	2.44
Amount of students		
1 – 300 persons	217	58.81
301 – 500 persons	93	25.20
501 persons up	59	15.99
2. The conditions of education provided in schools		
Basic education, emphasizing careers	246	66.67
Basic education in general, not emphasizing careers	119	32.25
No answer	4	1.08

Table 4.2 (Continued)

Basic Information of provided education	Amount	Percentage
3. The provision of career education		
Agriculture	206	55.82
Home economics and food	115	31.16
Handicrafts	174	47.15
Performance arts and music	63	17.07
Services	66	17.89
Technicians	46	12.46
Others	12	3.25
4. Classed on offer for career education		
Prathomsuksa 1 – 3	76	20.60
Prathomsuksa 4 – 6	217	58.81
Matthayomsuksa 1 – 3	134	36.31
Matthayomsuksa 4 – 6	23	6.23
5. Curriculum and subject management		
Extracurricular management	27	7.32
Within the curriculum		
- Provided in the Basic Career and Technology subject	192	52.03
- Provided as the additional subject according to the curriculum structure	112	30.35
- Provided as activities for learner development	139	37.67

From table 4.2, it is found that most highland and remote area schools offer classes from kindergarten to Prathomsuksa 6 (46.61 %), the number of students are between 1-300 persons (58.81 %), basic education is provided by emphasizing career education (66.67 %), which focuses on agriculture (55.82 %), the provision of career education is mostly offered for Prathomsuksa 4-6 (58.81 %), curricula and subjects are mostly provided in the Basic Career and Technology subject (52.03 %) and activities for learner development (37.67 %).

In addition, the interviews with the administrators and the Career and Technology teachers from schools that had good performance of operation shows that many of the highland and remote area schools were not confident in providing education emphasizing careers because the policy unit still monitors the quality of education provided from academic performance rather than career learning results and employment. One of the administrators claimed that, "At the beginning, teachers worried that if they focused on teaching career lessons, then students' O-Net test scores might decrease, and asked what should they do. So I had to slowly explain that if students graduate with high scores but do not have a chance to continue studying and do not know what to do for a living, then what are they going to do with those high scores? I spent quite a long time making them understand so that they stopped worrying because O-Net scores are a part of raising teachers' academic standing as well."

1.3 The analysis results of information regarding general conditions and problems of career education for highland and remote area schools

Regarding the results analysis, opinions toward general conditions and problems of career education for highland and remote schools were analyzed using a quantitative and qualitative study and are presented in the table with explanations as shown in table 4.3 – table 4.9.

Table 4 . 3 Mean ($\overline{X}$) and standard deviation (S.D) of the opinions toward general conditions and problems of career education for highland and remote area schools regarding the usage of the potential of the area for career education

Issues	Operation Sequences			Problem Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
1. Education, information survey, career resources, potential analysis of the area for the provision of career education	3.56	0.86	High	2.51	0.94	Moderate

Table 4.3 (Continued)

Issues	Operation Sequences			Problem Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
2. The application of potential of the area, location, climate, and landscape for the provision of career education	3.73	0.88	High	2.52	0.98	Moderate
3. The application of distinctive potential of natural resources for career education	3.77	0.87	High	2.46	0.98	Low
4. The application of distinctive culture available in the area for the provision of career education	3.73	0.88	High	2.26	0.83	Low
5. The application of distinctive potential of ways of life and occupations of the area for the provision of career education	3.78	0.81	High	2.32	0.86	Low
6. The application of distinctive potential of human resources and local wisdom of the area for the provision of career education	3.79	0.77	High	2.47	0.88	Low

From Table 4.3, it is revealed that opinions toward general conditions and problems of career education for highland and remote area schools regarding the application of the potential of the area for education is at a high level of operation sequence in using distinctive potential of human resources and local wisdom ($\overline{X} = 3.79$), using distinctive potential of ways of life and occupations of the community ($\overline{X} = 3.78$), and using distinctive potential of natural resources for the provision of career education ($\overline{X} = 3.77$) consecutively.

In regard to overall problems, they are at the low to moderate levels including first the application of the distinctive potential of location, climate, and landscape of the area for the provision of career education ($\overline{X} = 2.52$), and second the study and survey of careers, the analysis of the potential of the area for career education ($\overline{X} = 2.51$), and the application of distinctive potential of human resources and local wisdom of the area for the provision of career education ($\overline{X} = 2.47$) consecutively.

The results of the quantitative study were consistent with the interview study conducted with the administrators and Career and Technology teachers of the schools that had good performance; one of the administrators gave an opinion about the schools that applied the potential of the area to career education, "my school is in a tourist attraction area, so we can train our students to work in jobs related to hotel and services by which the students can work at resorts in the area." This is relevant to the opinion of a teacher from another school, as she stated that, "here we teach agricultural work, especially cultivating flower plants, because we are in a cool climate which is good for cold weather flower cultivation. But there are some problems, especially using local lecturers that are not teachers to help us, as we cannot let them teach alone and have to help them sometimes." These are also relevant to the results of the documentation study of school development plans and curricula that indicates developmental directions as well as career education projects and career subjects on offer.

Table 4.4 Mean ($\overline{X}$) and standard deviation (S.D.) of opinions toward general conditions and problems of career education for highland and remote area schools regarding participation and creation of networks for career education development

Issues	Operation Sequences			Problem Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
1. Coordination and creation of participation with school personnel for career education	3.86	0.86	High	2.30	0.91	Low

Table 4.4 (Continued)

Issues	Operation Sequences			Problem Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
2. Coordination and creation of participation with parents in the school service area for career education	3.82	0.76	High	2.25	0.90	Low
3. Coordination and creation of participation with local organizations with the school for career education	3.69	0.90	High	2.24	0.86	Low
4. Coordination and creation of participation with educational institutes, vocational colleges, universities, or governmental sectors for career education	3.36	1.02	Moderate	2.52	0.94	Moderate
5. Coordination and creation of participation with private organizations or foundations for career education	3.49	1.02	Moderate	2.37	0.92	Low
6. Coordination and creation of participation for the preparation of a career education development plan	3.58	0.77	High	2.40	0.91	Low
7. Coordination and creation of participation for setting up a curriculum for career education	3.57	0.81	High	2.51	0.88	Moderate

Table 4.4 (Continued)

Issues	Operation Sequences			Problem Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
8. Coordination and creation of participation with other organizations for the purpose of learning resources for career education	3.53	0.87	High	2.41	0.88	Low
9. Coordination and creation of participation for lecturers providing knowledge to students for career education	3.67	0.86	High	2.36	0.84	Low
10. Coordination and creation of participation for the support of materials, durable articles, and budgets for career education	3.67	0.83	High	2.44	0.95	Low
11. Coordination and creation of participation for assessment of career education	3.56	0.86	High	2.37	0.90	Low

From table 4.4, the overall operation sequence of each issue of opinions toward general conditions and problems of career education for highland and remote area schools regarding participation and creation of networks for career education development are at the high level which are: coordination and creation of participation with school personnel for career education ($\overline{X} = 3.86$), coordination and creation of participation with parents and communities in the school service area for career education ($\overline{X} = 3.86$), and coordination

and creation of participation with educational institutes, vocational colleges, universities, or government sectors for career education ($\overline{X}$ = 3 .3 6) consecutively. In addition, only the aspect of coordination and creation of participation with private organizations or foundations for career education is at the moderate level.

With regard to overall problems, they are all at the level of low to moderate, which included coordination and creation of participation with educational institutes, vocational colleges, universities, or government sectors for career education ($\overline{X}$ = 2 .5 2) , and coordination and creation of participation for setting up curricula for career education ($\overline{X}$ = 2 .5 1) at the moderate level, while the issues at the low level of problem sequences are coordination and creation of participation with local organizations for career education ($\overline{X}$ = 2.24) consecutively.

The results of the interview with the administrators, academic teachers, and Career and Technology teachers of the schools that had good performance, the study of meeting documents, and schools' summary work revealed that these schools had coordinated with vocational colleges and universities for the purpose of academic support and teaching and learning management, in which mostly vocational colleges and universities helped with teaching and learning management and curriculum development for career education. One of the teachers stated that "Suan Dusit Rajabhat University helped us develop a hotel management and cooking course curriculum." Furthermore, it was found that entrepreneurs are an important factor that helps motivate learners to study in the career, as an administrator from one of the schools mentioned that, "entrepreneurs are quite important in helping us to be successful in providing career education for students. The entrepreneurs that I am coordinating with, they even planned to hire our students after they graduate. " However, problems were encountered regarding the coordination and creation of participation with parents who have economic problems not being able to support learning materials and tools for their children, and the parents' understanding that students come to school for academic study and not to work, as one of the administrators mentioned that, "at the beginning some parents did not understand, they said that why don't teachers do their teaching, but let students sell coffee."

Table 4 .5 Mean ($\overline{X}$), standard deviation (S.D.), and opinion sequences toward general conditions and problems of career education for highland and remote area schools regarding resource and learning resource management

Issues	Operation Sequences			Problem Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
1. Setting up school's policy for career education	3.68	0.81	High	2.25	0.87	Low
2. Setting up school's development plan for career education	3.68	0.86	High	2.34	0.87	Low
3. The preparation of school's work structure for career education	3.65	0.82	High	2.34	0.90	Low
4. Appropriate personnel allocation for career education	3.72	0.78	High	2.44	1.00	Low
5. Personnel development for career education	3.61	0.83	High	2.60	0.97	Moderate
6. The support of materials, equipment, and durable articles for career education	3.66	0.83	High	2.40	0.96	Low
7. Preparation of operation rooms or school shops for career education	3.54	0.88	High	2.58	1.14	Moderate
8. School's monitoring for career education	3.60	0.91	High	2.41	0.91	Low

From table 4.5, it is shown that the overall operation sequence of opinions toward general conditions and problems of career education for highland and remote area schools regarding resource and learning resource management is at the high level, which are: appropriate school personnel allocation for career education ($\overline{X} = 3.72$), and setting up school's policy for career education and setting up school's development plan for career education ($\overline{X} = 3.68$). The issues that have the lowest operation sequence were the

preparation of operation rooms or school shops for career education ($\overline{X}$ = 3 .5 4) consecutively.

Regarding overall problems, they are at the low to moderate levels, of which the important problems are: school's personnel development for career education ($\overline{X}$ = 2 .60), preparation of operation rooms or school shops ($\overline{X}$ = 2.58), appropriate personnel allocation for career education ($\overline{X}$ = 2 .4 4), and setting up school's policy for career education ($\overline{X}$ = 2.25) consecutively.

The observation results of school's environment, operation rooms as well as durable articles and career equipment, and the results from the interview with administrators, academic teachers, and Career and Technology teachers of the schools that had good performance showed: the schools encountered a lack of qualified teachers for the needed careers, budget problems, preparation of operation room problems, and a lack of needed equipment for certain careers, for which they used entrepreneur and community learning spaces as substitutes. One of the administrators stated that, "the school needs teachers who have a degree in technical subjects, home economics, or vocations, but they are difficult to find; for example, accounting teachers, if they do not have a teaching license, cannot teach." Another administrator mentioned about the budget problem that, "career education requires more budget than normal education, but the government still allocates the budget per person as in general schools." In addition, a Career and Technology teacher from another school talked about the problem of durable articles being used in teaching and learning in that, "some equipment we do not have, and some that were provided by the government did not meet our needs; and they are not up-to date, such as agricultural and technical tools. So, we had to change teaching methods by adding learning sources and entrepreneurs into lessons to help us; for example, we took students to some resorts near our school, which was good because we did not have to pay for anything, and it was good for those resorts because students worked for them." Furthermore, one of the technical teachers commented that, "some items of durable articles are not up-to date and not suitable for teaching; however, teachers tried to use learning sources within the area to help with the learning and teaching. For example, an agricultural teacher said that "our school does not have a coffee plantation, but people around here have a lot, so I took our students to learn at the coffee plantation, so that they could get direct experience."

Table 4.6 Mean ($\overline{X}$) and standard deviation (S.D.) of sequences of opinions toward general conditions and problems of career education for highland and remote area schools regarding curriculum development.

Issues	Operation Sequences			Problems Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
1. Setting up learners' quality target for career education	3.64	0.82	High	2.39	0.92	Low
2. Setting up vision for career education	3.72	0.81	High	2.32	0.94	Low
3. Setting up curriculum structure for career education	3.68	0.86	High	2.32	0.82	Low
4. Selection of context for curriculum for career education	3.65	0.76	High	2.41	0.89	Low
5. Development of career and technology subjects for career education	3.67	0.78	High	2.38	0.99	Low
6. Preparation of additional course description for career education	3.61	0.79	High	2.34	0.92	Low
7. Preparation of explanation for club activities for career education	3.64	0.77	High	2.34	0.92	Low
8. Preparation of learning and teaching plan for career education	3.62	0.80	High	2.37	0.86	Low
9. Setting up learning and teaching methods for career education	3.65	0.80	High	2.35	0.94	Low

Table 4.6 (continued)

Issues	Operation Sequences			Problems Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
10. Setting up guidelines of measurement and assessment for career education	3.58	0.77	High	2.34	0.92	Low

From table 4.6, it was found that the overall operation sequence of opinions toward general conditions and problems of career education for highland and remote area schools is at the high level, which were: setting up a vision for career education ($\overline{X} = 3.72$), preparation of curriculum structure ($\overline{X} = 3.68$), and setting up guidelines of measurement and assessment for career education ($\overline{X} = 3.58$) consecutively.

The overall problem sequence is at the low level which included: career and technology subject development for career education ($\overline{X} = 2.38$), preparation of learning plan for career education ($\overline{X} = 2.37$), setting up vision for career education, and preparation of curriculum structure for career education ($\overline{X} = 2.32$) consecutively.

The results of school documentation study and the interview with the administrators, academic teachers, and career and technology teachers of the schools that had good performance revealed that most of the curriculum development problem was caused by limitations of personnel in that they lacked experience and were not expert in preparing course descriptions, as one of the administrators said that, "teachers in highland schools, they relocate so often, only a few years of teaching and then they relocate, and after that new teachers come, so they do not have enough experience and expertise." Whilst an academic teacher mentioned about her own curriculum development method that, "the school principle coordinated with agricultural colleges, technical colleges, vocational colleges, and the Skilled Labor Development Center in order to ask for cooperation in getting teachers to help me prepare the curriculum; therefore, we got a clear course description." Moreover, the administrator from the same school explained regarding curriculum details that, "the curriculum used is adjusted from a short course of a vocational college that we rearranged to be continuous in both skills and context that will help learners to have skills and knowledge simultaneously."

Table 4.7 Mean ($\overline{X}$) and standard deviation (S.D.) of opinion sequences toward general conditions and problems of career education for highland and remote area schools regarding learning and teaching.

Issues	Operation Sequences			Problem sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
1. Public relations and creation of understanding about career teaching and learning for students	3.67	0.82	High	2.18	0.91	Low
2. Preparation of appropriate schedule for career teaching and learning	3.71	0.86	High	2.32	0.93	Low
3. Allow learners to choose career base on their interest and skills	3.69	0.89	High	2.29	0.90	Low
4. The provision of both theoretical and practical teaching and learning	3.72	0.82	High	2.24	0.87	Low
5. Teaching and learning using outside school lecturers or local wisdom	3.64	0.83	High	2.24	0.89	Low
6. Teaching and learning using learning sources within community or local areas	3.70	0.88	High	2.15	0.86	Low
7. Teaching and learning using entrepreneurs	3.27	1.12	High	2.49	1.04	Low
8. Teaching and learning in a form of career camp	3.13	1.10	Moderate	2.53	1.08	Low
9. Short course teaching and learning	3.25	1.03	Moderate	2.45	1.05	Low

Table 4.7 (continued)

Issue	Operation Sequences			Problem sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
10. Teaching and learning by allowing students to produce and sell products	3.45	1.06	Moderate	2.39	0.93	Low
11. Teaching and learning by letting students do as a career project	3.54	0.87	High	2.33	0.90	Low
12. Teaching and learning by practicing entrepreneurship skills	3.34	1.02	Moderate	2.50	1.05	Low
13. Teaching and learning with the provision of job training at actual entrepreneurs	3.19	1.16	Moderate	2.58	1.17	Low
14. Assessment that focuses on actual performances	3.71	0.85	High	2.35	0.88	Low

From table 4.7, it was found that the overall operation sequence of opinions toward general conditions and problems of career education for highland and remote area schools is at the moderate to high levels which are: the provision of both theoretical and practical teaching and learning ($\overline{X} = 3.72$), preparation of appropriate schedules for career teaching and learning and assessment that focuses on actual performance ($\overline{X} = 3.71$), and the issue that is at the low level is teaching and learning in a form of career camps ($\overline{X} = 3.13$) consecutively.

With regard to overall problems, they are at the low level , which can be sequenced from high to low means, including: teaching and learning with the provision of job training with actual entrepreneurs ($\overline{X} = 2.58$), teaching and learning in a form of career camps ($\overline{X} = 2.53$), and public relations and creation of understanding about career teaching and learning for students ($\overline{X} = 2.18$) consecutively.

The results of the interview with the administrators, academic teachers, and career and technology teachers and the documentation study of performance summary of the schools that had good performance showed that every school provided career teaching and learning in the form of career camps in order to motivate students and create a better understanding about the process of career education among students. Moreover, students can immediately create a career project from the teaching after the camp has ended. One of the career and technology teachers from the schools that had good performance stated that "Career camps help encourage students as well as creating good attitudes toward careers." Whereas, the quantitative data found that schools in general usually offered normal teaching and learning by providing both theoretical and practical knowledge. Furthermore, every school that had good performance provided career teaching and learning with the provision of job training with actual entrepreneurs as well.

Table 4.8 Mean ($\overline{X}$) and standard deviation (S.D.) of opinion sequences toward general conditions, problems, and management methods of career education for highland and remote area schools regarding supervision

Issue	Operation Sequences			Problem Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
1. Supervision planning for the trail and providing help for career education	3.51	0.86	High	2.22	0.85	Low
2. Supervision process for the development of administration for career education	3.54	0.81	High	2.20	0.86	Low
3. Supervision process for the development of curriculum for career education	3.53	0.85	High	2.25	0.80	Low
4. Supervision process for the development of personnel's teaching ability	3.56	0.87	High	2.23	0.79	Low

Table 4.8 (continued)

Issues	Operation Sequences			Problems Sequences		
	$\overline{X}$	S.D.	Interpreted	$\overline{X}$	S.D.	Interpreted
5. Supervision for the development of cooperation and network for career education	3.54	0.86	High	2.25	0.93	Low
6. Supervision process for the development of measurement and assessment for career education	3.55	0.82	High	2.30	0.87	Low

From table 4.8, it is revealed that the overall operation sequence of opinions toward general conditions and problems toward career education for highland and remote area schools regarding supervision is at the high level, which included: supervision process for the development of personnel's teaching ability ($\overline{X} = 3.56$), supervision process for the development of measurement and assessment for career education ($\overline{X} = 3.55$), and the issue that has the lowest mean is supervision planning for the trial and providing help for career education ($\overline{X} = 3.51$) consecutively.

Regarding overall problems, they are at the low level, which are: supervision process for the development of measurement and assessment for career education ($\overline{X} = 2.30$) , supervision process for the development of curriculum for career education, and supervision process for the development of cooperation and network for career education ($\overline{X} = 2.25$) consecutively.

The study results from the interview with the administrators, academic teachers, and career and technology teachers of the schools that had good performance showed that every school paid attention to supervision for keeping the trial and providing help, especially the supervision for the development of personnel's teaching ability, as one of the administrators stated that, "teaching careers for students and using student's labor are different; some teachers understood that asking students to feed the fish at the school's pond is teaching

careers, but if students cannot answer what kind of food that they use for feeding the fish, how much it costs, or what age of fish it's suitable for, then such work cannot be called career teaching. Therefore, we need to supervise and help them closely."

1.4 Methods for career education for highland and remote area schools

The study results of methods for career education for highland and remote area schools using context analysis from the questionnaire and qualitative study were revealed as follows.

Table 4.9 The study results of methods for career education for highland and remote area schools in the aspect of applying the potential of the area for career education

Issues	Frequency (N = 374)
1. Should choose to teach subjects that are relevant to their own contexts	19
2. Should use entrepreneurs within the area as learning sources	12
3. The school must analyze in order to find out how is their context has professional potential	8
4. Should use local wisdom as one of the tools to help in the teaching	7
5. Should choose to teach subjects that are relevant to the availability of natural resources in the area	5
6. Should develop local handicraft to be a career for students	2

According to table 4.9, it was found that methods for career education for highland and remote area schools in the aspect of applying the potential of the area for career education suggested that the schools teach subjects relevant to their context and use entrepreneurs located in the area as learning resources, for which the schools must analyze in order to find out how their context has professional potential.

Table 4.10 The study results of methods for career education for highland and remote area schools in the aspect of participation and creation of networks for career education development.

Issues	Frequency (N = 374)
1. Should build cooperation for both inside and outside the school	15
2. Should create participation including thinking, doing and appreciation as much as possible in every process	10
3. The creation of cooperation within the school helps building confidence for the creation of cooperation outside the school	5
4. Should create cooperation with the concern of benefits for both parties including schools and cooperated units	5

According to table 4.10, it points out that methods for career education for highland and remote area schools in the aspect of participation and creation of networks for career education development are the creation of cooperation both inside and outside the school and participation of thinking, doing, and appreciation, for which the creation of internal cooperation will help to build confidence for the creation of external cooperation; however, there should be a concern for both schools and cooperating units.

Table 4.11 The study results of methods for career education for highland and remote area schools in the aspect of resource and learning source management.

Issues	Frequency (N = 374)
1. Schools should set career education policies clearly.	15
2. Creating participation for every party in order to push forward career education policies.	11
3. Considering to use resources including lecturers, learning sources, entrepreneurs, and equipment appropriately and for most benefits.	10

Table 4.11 (continued)

Issues	Frequency (N = 374)
4. Emphasizing personnel development together with building, place, training shop, and durable article development.	9
5. Integrating resources used in career learning for the benefits of the development in other fields such as landscape improvement or building maintenance.	9
6. Develop teaching and learning to the point where students can produce a product and earn income in order to use the income to buy teaching and learning materials for the next course	8
7. Allowing parents to participate in the investment of materials appropriately.	8

From table 4.11, methods for career education for highland and remote area schools in the aspect of resource and learning resource management consisted; clear career education policies, creation of participation among every party, appropriate usage of resources, such as lecturers, learning sources, entrepreneurs, and equipment, for the best benefits by emphasizing personnel development together with building development, and integration of resources used in career learning for development in other fields, such as landscape improvement or building maintenance.

Table 4.12 The study results of methods for career education for highland and remote area schools in the aspect of curriculum development.

Issues	Frequency (N = 374)
1. Curriculum design for career creation for learners should consider the potential and appropriateness of resources in the area	9
2. Should allow entrepreneurs or people who are the expert in the field to participate the curriculum design as well.	8
3. Each subject should be continuous in order to create expertise in the field.	7
4. Should involve curriculum experts to help plan the curriculum systematically.	5
5. Considering the ability to work of the learners to use is as the curriculum target.	4
6. Considering the possibility of curriculum management including time, teachers, materials, and durable articles.	4
7. Considering the need of labor market for the career.	3
8. Should set it as additional subject because it will be more sustainable than setting it as a club or activity.	3

From table 4.12, methods for career education for highland and remote area schools in the aspect of curriculum development are curriculum design for career creation for learners, for which the potential and appropriateness of resources in the area should be considered by allowing entrepreneurs or people who are experts in their fields to participate in selecting the context for the curriculum, the involvement of curriculum experts to systematically help planning the curriculum, setting up curriculum targets by considering learners' abilities, the labor market's needs, and the possibility of curriculum management regarding time, teachers, materials, and durable articles, and setting up the curriculum as an additional class because it will be more sustainable than setting it up as a club or a group activity.

Table 4.13 The study results of methods for career education for highland and remote area schools in the aspect of teaching and learning management

Issues	Frequency (N = 374)
1. Should provide the teaching and learning that focuses on one on one doing.	14
2. Teachers should understand the real career teaching by focusing on the capability of that career rather than aiming on producing a product.	10
3. Teachers should educate students the attribute of hard working, being patient, being engrossed, as well as an appropriate attribute of the career.	12
4. Should help students to earn income during taking the course because it is an important motivation for career education.	11
5. The context used in the class should be up to date and can be applied for future career.	7

From table 4.13, it reveals that methods for career education for highland and remote area schools in the aspect of teaching and learning management are teaching and learning that focuses on one-on-one action, teachers' understanding about reaching career teaching by focusing on the capability of the career rather than aiming to produce a product, the appropriateness of the context used for teaching, which should be up-to-date and be able to be applied to a future career, and the educational attributes of hard work, being patient, being engrossed, and other appropriate attributes of the career. Additionally, allowing students to make income during the course is an important motivation for career education.

Table 4.14 The study results of methods for career education for highland and remote area schools in the aspect of supervision.

Issues	Frequency (N = 374)
1. Should create reliability between supervisors and people who are being supervised before aiming at supervision issues.	9
2. Supervision should be in a friendly atmosphere.	5
3. Supervisors should understand the concept of career. education very well.	4
4. Should build public learning community as a tool to supervise sustainably.	2

From table 4.14, it was found that methods for career education for highland and remote area schools in the aspect of supervision consisted of the creation of reliability between supervisors and people who are being supervised within a friendly atmosphere before dealing with supervision issues. In addition, the supervisors should understand the concept of career education very well and should build a public learning community (PLC) as a tool to supervise sustainability.

4.2 Part 2: The research results of the model of basic education management for career education of the schools that had good performance.

The analysis results of information concerning concepts, principles, objectives, related factors, strategies, procedures, and management methods of career education of the schools that had good performance.

Table 4.15 The analysis results of the important issues concerning concepts and principles of career education of the schools that had good performance.

Principles of career education	Frequency (N = 5)	Percentage
1. Providing education in order to develop learners to be complete humans, including knowledge, skills, and attitudes.	5	100
2. Learners can rely on themselves.	4	80
3. Learners can live in society happily.	5	100
4. Learners are able to work in their hometown.	4	80
5. Focusing on the participation of every party.	5	100
6. Using the school as a developmental base.	5	100
7. Providing career education that is relevant to the context and potential of the area.	5	100
8. Focusing on practice.	5	100
9. Responding to different needs of learners.	4	80

According to table 4.15, the five schools that had good performance mentioned concepts and principles of career education in that there should be a provision of education that develops learners to be complete humans, including knowledge, skills, and attitudes, and learners should be able to rely on themselves and live happily in society. Furthermore, learners should be able to work in their hometown without leaving their home to work somewhere far away. The school should be a developmental base by allowing every party to participate, aiming at teaching careers relevant to the context and potential of the area in order to respond to different needs of learners while focusing on practice.

Table 4.16 The analysis results of the important issues concerning the objectives of career education of the schools that had good performance.

The objectives of career education	Frequency (N = 5)	Percentage
1. To educate learners to have knowledge for a career.	5	100
2. To develop learners' skills for careers.	5	100
3. To allow learners to be able to operate a business.	4	80
4. Learners are able to make income during the course.	4	80
5. To create positive attitudes toward honest careers.	5	100
6. To develop learners to be hard-working, patient, disciplined, and responsible as well as to have good behavior for working.	5	10
7. To allow students to foresee their career path.	1	20
8. To create a career learning opportunity for students in highland and remote area schools.	2	40

From table 4.16, the five schools that had good performance mentioned the objectives of career education, which included: to educate learners to have career knowledge and skills, learners can be able to operate a business and make income during the course, learners can foresee their career path and have positive attitudes toward honest careers, to develop learners that will be hard-working, patient, and responsible as well as have good behavior for working, and to create a career learning opportunity for students.

Table 4.17 The analysis results of the important issues concerning related factors of career education of the schools that had good performance

Related factors of career education	Frequency (N = 5)	Percentage
The school's context factors		
1. The school's factors regarding environment, natural resources, topography, and location	5	100
2. The community's career context	5	100
3. The potential of traditions and culture of the community	4	80
4. Learning resources near the school	4	80
5. Local wisdom	5	100
Participatory factors		
6. The participation of the community and parents	5	100
7. Cooperation from local offices, such as the sub-district administrative organization or the district agricultural extension office	4	80
8. Cooperation from entrepreneurs in the area	4	80
9. Help from foundations and private organizations	4	80
10. Parents' objectives and expectations	3	60
11. Parents' attitudes	4	80
Factors of school's internal process		
12. The school's direction and policy	5	100
13. The preparation of materials, durable articles, and learning resources of the school	5	100
14. The engrossment of administrators, teachers, and personnel	4	80
15. Curriculum that is good for career teaching	5	100
16. Personnel's ability for career teaching	4	80
17. The supervision and help from administrators and related officials	4	80
18. Student's interests	5	100

From table 4.17, it is revealed that the schools that had good performance mentioned the factors that are related to career education in three parts, which are: 1) the school's context factors, which consisted of environment, natural resources, topography, location, tradition and culture, local wisdom, and community learning resources; 2) participatory factors, which are the participation of parents and community, cooperation from officials and entrepreneurs, help from foundations and private organizations, and personnel's cooperation within the school; and 3) factors of the school's internal process which included the school's direction and policy, the engrossment of administrators, teachers, and personnel, the preparation of materials, durable articles, and learning resources, a curriculum that offers good career teaching, personnel's ability for career teaching, and supervision and help from administrators and related officials, in which students' interest and parents' attitudes are in a successful condition.

Table 4.18 The analysis results of the important issues concerning strategies used for career education of the schools that had good performance.

Strategies used in for career education	Frequency (N = 5)	Percentage
1. Using the creation of a cooperating network and participation	5	100
2. Using an entrepreneurial network for learning development	4	80
3. Using a school network that focuses on career education	5	80
4. Using the school as a developmental base	5	100
5. Considering the strengths that are opportunities for development	5	100
6. Work strategy using quality circle (PDCA)	5	100
7. Public relations and creation of participation	3	60
8. Following the Princess Srinagarindra née Sangwan Talapat's concept of "help them to be able to help themselves"	1	20

From table 4.18, it was found that the schools that had good performance clarified the strategies used for career education, which included: strategy of cooperation and participation, including an entrepreneur network and a school network that focus on career education, strategy of working by using the school as a developmental base, and considering strengths that are opportunities to move forward according to the quality circle (PDCA) together with public relations simultaneously.

Table 4.19 The analysis results of the important issues concerning methods for career education of the schools that had good performance

Methods for career education	Frequency (N = 5)	Percentage
The analysis of general conditions and problems		
1. Study general conditions and problems of schools	5	100
2. Analyze the status of the school (SWOT Analysis)	4	80
3. Survey students' interests	5	100
Planning		
4. Define the direction and emphasized points of career teaching	5	100
5. Plan human resources, finance, and work	5	100
Operation according to plans		
6. Develop personnel	5	100
7. Develop school's curriculum	3	60
8. Develop learning sources and workshop houses	4	80
9. Provide related materials and durable articles	4	80
10. Provide teaching and learning according to the curriculum	4	80
11. Provide teaching and learning using the participation of a network association	5	100
12. Provide teaching and learning by focusing on actual practice	5	100

Table 4.19 (continued)

Methods for career education	Frequency (N = 5)	Percentage
13. Provide teaching and learning by promoting students to earn a living while studying	4	80
14. Provide teaching and learning using entrepreneurs	4	80
15. Provide teaching and learning by organizing it as a career camp	3	60
Monitoring		
16. Always keep monitoring and supervising	5	100
17. Supervising and monitoring during meetings	5	100
18. Supervising and monitoring by giving a performance presentation	4	80
19. Supervising and monitoring including teaching, learning, and performance	5	100
Improvement and development		
20. Summarizing performance periodically	4	80
21. Developing previous performance	5	100

From table 4.19, it was found that the schools that had good performance mentioned methods for career education by starting from studying general conditions and problems of the schools, analyzing strengths, weaknesses, opportunities, and threats (SWOT analysis), and surveying students' interests. After that, they defined the direction and emphasized points of career teaching, and then planned for natural resources, personnel, learning resources, budget, and curriculum. Then, they developed and managed teaching and learning by focusing on actual practice using the participation of a network association, entrepreneurs, or organizing it as a career camp. In addition, there should be promotion so that students can earn a living while studying, and there should be supervision and monitoring of teaching, learning, and performance by various ways, such as meetings, presentations, and performance summary for improvement.

Table 4 . 20 The analysis results of the important issues concerning monitoring and assessment methods of career education of the schools that had good performance.

Issues	Frequency (N = 5)	Percentage
1. Assessment that covers every dimension and element	5	100
2. Emphasize the target for success, in which the quality of learners includes knowledge, skills, and positive attitudes toward careers	5	100
3. Survey parents' satisfaction	5	100
4. Interview teachers and personnel	4	80
5. Use participatory evaluation	4	80
6. Use both formal and informal tools	5	100

According to table 4.20, it is revealed that the schools that had good performance mentioned about methods of career education that the assessment should cover every dimension and every element by applying participatory assessment and focusing on the target, which is the quality of learners, including, knowledge, skills, and positive attitudes toward careers. In addition, both informal and formal tools should be used in order to survey satisfaction of parents, teachers, and personnel.

4.3 Part 3: The results of the creation and development of a career education model for highland and remote area schools.

3.1 The results of the creation the career education model for highland and remote area schools.

The researcher has compiled the study results of general conditions of problems and methods for career education for highland and remote areas as well as the study results of concepts, principles, objectives, related factors, strategies, procedures, and methods of career education of the schools that had good performance in the first step to be presented in this part for the development of the model, presenting it in accordance with elements of the model as follows.

3.1.1 Concepts and principles of the career education model for highland and remote area schools.

The study results of documentation and related research and methods of career education, as well as the results of the career education model study of the schools that had good performance, reveal that principles of career education model for highland and remote area schools consisted of important matters as follows:

1) It is the provision of education using the schools as a developmental base because schools in highland areas are the place that gathers the community's students, and it is accessible for people, so schools are a good learning community resource.

2) Career teaching and learning for highland and remote area schools is the provision of experience that aims to offer knowledge, skills, and positive attitudes toward careers so that learners can forecast their career paths by putting emphasis on practice. Learners will obtain knowledge and skills that can be applied to real life, so they can eventually rely on themselves.

3) The application of participation from every sector in the community. Allowing the community to participate in every schools' activities offers cooperative learning from practice; moreover, knowledge and technology that are being transferred can be applied to develop the community in order to support the community's strength, leading to self-reliance and sustainable development. While development operation requires support for the schools that lack technology, knowledge, materials, equipment, or budget, all this required cooperation, from both government and private sectors, with participatory principles and effective coordination, is needed.

4) The application of the potential and resources in the area to provide career education. The schools should study the community's context in order to analyze environment, natural resources, population, belief, traditions, culture, local wisdom, and innovation. The application of the potential of the area is the analysis of school's cost in order to find out what characteristics could affect production quality and create differences and competitive opportunities at both the local and national levels. The potential of the area consists of costs, which are resources, such as minerals, forest, biodiversity, climate, such as the climate that is good for agricultural production, etc., topography, location (so resources can be planned for effective usage), arts, traditions, and culture in which each area is unique and is important for tourist attractions, and human resources, such as a person

who is friendly that can help develop potential human resources and become quality labor. The study of these contexts will help analyze strengths and weaknesses of the community as well as to set up a direction for further career education. The schools should plan the administration, curriculum design, and teaching and learning activities to support careers that are relevant to the potential of the area.

5) The application of the teaching and learning principle that focuses on students consisted of two important aspects: the operation that considers learners' differences, and the operation that supports learners to apply their knowledge into their real life in order to improve themselves to their highest potential as possible. As each learner is different in needs, interests, and skills, so the provision of career education for highland and remote area schools should offer various contexts of careers to support learners' requirements according to the teaching and learning that focuses on students.

3.1.2 The purposes of career education for highland and remote area schools

The career education model that aims for learners to be skillful in careers that are relevant to the area's potential, is the model that can very well be used as a method to develop career education as well as create options for educational services access for students in highland and remote area schools. This is because the model does not separate students from family, but helps them earn a living while studying, reduces school dropouts, and helps those who do not continue to study in universities to be skillful to have appropriate careers in the community so as to be able to live happily in a diverse society. The objectives and purposes are as follows:

1) To educate learners to have career knowledge, skills, and experience to appropriately apply them to the context of highland and remote areas.

2) To create positive attitudes for learners, and they can forecast career paths for their further studies.

3) To create the opportunity of career learning for students from highland and remote areas so that they can find their interests and skills as well as develop their potential.

3.1.3 Related factors according to the career education model for highland and remote area schools.

From the study of general conditions, problems, and methods of career education as well as the study of the career education model for highland and remote area schools, there are three main related factors, of which each main factor contains secondary factors as follows:

1) The factor of the potential of the area consists of natural resources, arts, culture and traditions, and human resources.

2) The factor of participation and educational development network consists of the participation of the governmental network, parents and community network, and the private sector network for educational development.

3) The factor of a school's procedures consists of resource and learning source management procedure, curriculum development procedure, teaching and learning procedure, and supervision procedure.

Which each part is related to each other as shown in figure 4.1

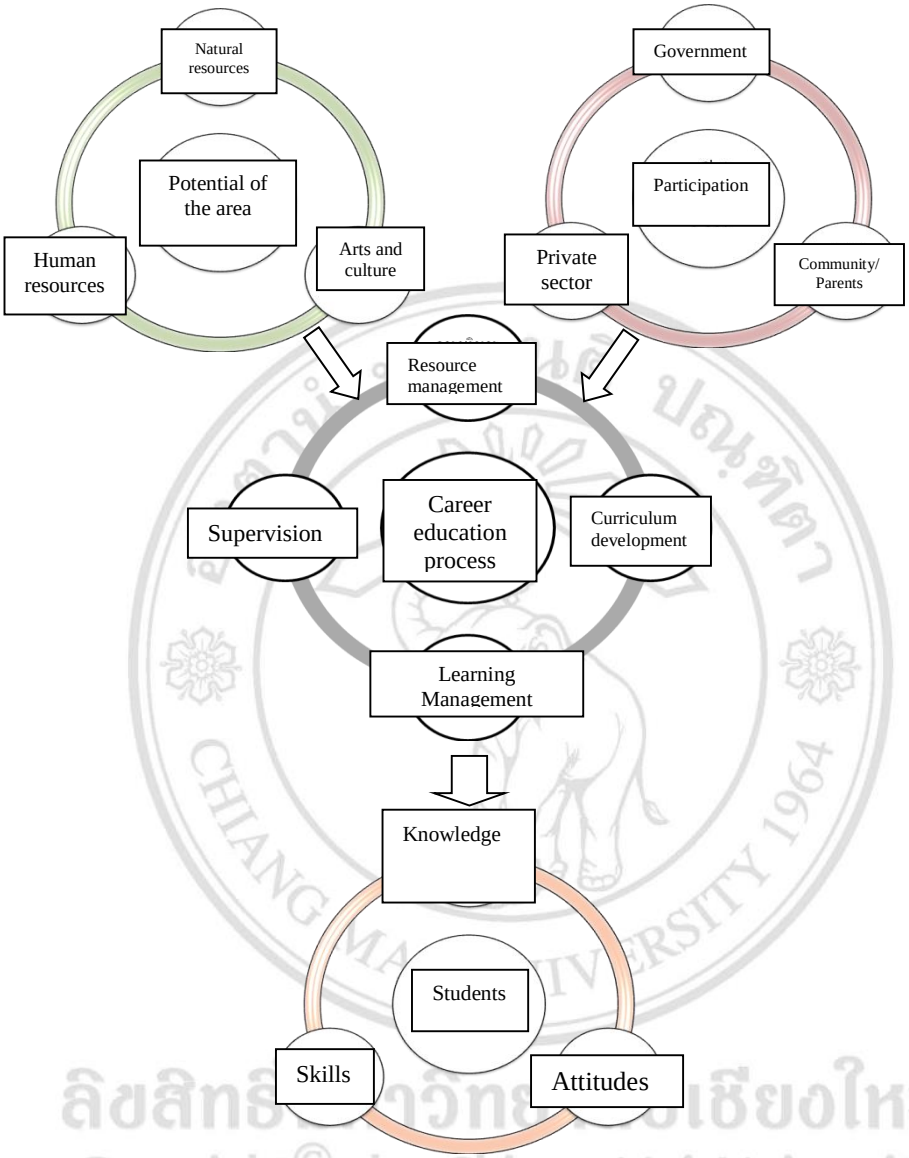

Figure 4.1 The career education model for highland and remote area schools.

According to diagram 8, the relations can be explained as follows.

1. The factor of the potential of the area; the provision of career education should consider the cost regarding the potential of the community, such as natural resources, climate, topography, arts and culture, and human resources, and use them as the context determinant and support for career education procedures according to the community's needs. This will affect the efficiency of teaching and learning, including the

aspect of knowledge, materials, and lecturers, or local philosophers, and the quality of learners will be different depending on the context of each area. Furthermore, this will lead to advantages of opportunity for competition both locally and internationally.

2. The factor of participation and educational development; to develop career education sustainably, it requires adherence to participation. The schools should give opportunities to stakeholders to participate in the process of thinking, doing, and taking responsibility, including the government and private sectors, community, and parents. In addition, the schools should support and promote to have every party participate in career education, such as giving lectures, planning curriculum, suggesting teaching approaches, creating networks, and coordinating with other offices in order to gather resources and help students and teachers meet learning requirements.

3. The factor of school's procedures, which are operated by using the schools as a developmental base, are detailed as follows:

3.1 Resource and learning resource management is the operation starting from setting up the school's policy, for which administrators, teachers, commissioners, parents, and communities work with positive attitude and pay attention to the creation of skills that will help move forward the occurrence of career education development. Supporting personnel to have knowledge and understanding as well as positive attitude and skills for career education, developing and creating readiness regarding learning resources by gathering resources for administration, and connecting external organizations are important factors that will lead career education to a successful level.

3.2 Curriculum development is necessary to be operated carefully, and it should cover the main purpose of career education so that students will realize the value of the education, think systematically, collect knowledge and necessary skills for work, seek for opportunities to work, and eventually enter into the world of work. The schools that are successful at implementing career education will connect career knowledge from the community by setting up context and curriculum that is relevant to the needs and production models of the community. Regarding the development of curriculum for career education, career subjects can be added in the form of a fundamental course, additional courses, or learner development activities. Furthermore, it can be operated as a project or an additional activity outside the curriculum for those who are interested in it as well by paying attention to the context that aims to make learners develop their abstract thinking, acceptance of

variety, differences of duty, and careers in society as well as obtaining necessary skills and knowing how to seek for opportunities, which will lead to positive attitudes and motivation.

3.3 Teaching and learning; teaching and learning methods for career education for highland and remote area schools can be operated in three characteristics as follows:

Characteristic 1: Providing career teaching and learning using the school's readiness, including personnel, materials, durable articles, and learning resources.

Characteristic 2: Providing career teaching and learning in which the school cooperates with guest lecturers outside the school, local wisdom folks, entrepreneurs, educational institutes, and the governmental and private sectors that have readiness regarding personnel, materials and durable articles, and learning resources.

Characteristic 3: Providing career teaching and learning outside the school's curriculum is the provision of learning that supports learners who are interested in using time after school so that learners will earn a living while studying, which is operated according to interests, skills, and abilities; students can practice their career with family or community and use the knowledge for further career development.

However, career teaching and learning requires actual practice for both working and business operation so that learners will be able to work and earn a living while studying. Moreover, teachers should help students to see the connection of knowledge obtained from schools and knowledge from real life, allowing students to participate in fun and interesting activities so that they have positive attitude and obtain knowledge and skills for their future.

3.4 Supervision is the process that helps teachers to be able to manage teaching and learning effectively concerning curriculum and teaching development and learning network creation, in which the operation is done simultaneously step by step. In addition, there are planning, monitoring, and assessment as well as building understanding in order to motivate teachers who are being supervised and encouraging them to work toward their best potential. The responsibility for supervision consists of many important parts, starting from curriculum management, which is: providing suggestions to teachers, planning for operation, implementing curriculum, allocating teachers to teach appropriately with their knowledge, skills, and experience, and regularly assessing curriculum implementation using appropriate techniques and tools; teaching and learning development

which is: supporting teachers' teaching, providing curriculum documentation, budget, and learning materials, and setting up the environment that offers a nice atmosphere for teaching and learning; personnel development, which is: the support of personnel's potential using various methods, such as meetings, trainings, seminars, and class observations as well as the appropriate promotion of teachers' career advancement; and learning community network creation, which is the building of opportunities for teachers to gather and help each other solving problems and improve teaching and learning; moreover, this also includes the building of a cooperation network using various media and methods.

3.1.4 Development of strategies according to the career education model for highland and remote area schools.

There are three important strategies that will help make career education for highland and remote area schools to be successful as follows:

1) The strategy of using areas and schools as a developmental base; the community in highland and remote areas has its own characteristic and identity regarding traditions and culture; it contains the knowledge and local wisdom of the tribe and natural resource strengths that can be applied to career education. The usage of human resources and cultural and traditional strengths is an important strategy for career education; therefore, schools should analyze their strengths and weaknesses in the area as well as the school's potential in order to select operation methods or offer career education that is relevant to the community's potential.

2) The strategy of participation and network for career education; cooperation and support from the community surrounding the schools and other communities and organizations, such as governmental and private sectors, are all important factors that will help the schools to solve the problem of the lack of materials, equipment, and personnel, which are the school's limitations. Besides, they will support career education to be successful and will offer a chance for stakeholders to play a role in career education in the aspect of resources, budget, labor, ideas, and opinions, which are quite important and necessary procedures. The support of participation is not only relevant to management principles, but also is the factor that helps to create understanding of the operation of career education as well, leading to the acceptance of each other, reducing the gap of communication and conflicts that might occur, and showing the sincerity of the people who are providing the education, which will result in the success of such operations.

3) The strategy of development using the analysis procedure of educational institute's status (SWOT Analysis) and quality cycle operation; which contains: Plan, refers planning the operation, Do, refers to following the plan, Check, refers to monitoring and following up on the results, and Act, refers to improvement and development. Operation under important procedures are resources and learning resources management, curriculum development, learning management, and supervision.

3.1.5 Educational methods according to the career education model for highland and remote area schools.

From the principle of using schools as a developmental base, the participation of community, self-reliance and the usage of potential and resources of the area economically and effectively, and the application of analysis techniques (SWOT analysis) for educational institutes with the PDCA (Plan, Do, Check, Action) cycle are the development procedures that should be contained and are shown in the following operational details:

Step 1: Analyze the potential of the area, environment, and educational institutes (SWOT Analysis) in order to study opportunities and threats of external factors and strengths and weaknesses of internal factors, for which the study should cover important contents of career education as follows:

Resource and learning resource management, which consists of the analysis of strengths that are opportunities in the aspect of the potential of the area, such as topography, traditions, culture, learning resources, entrepreneurs, and natural resources. Furthermore, the analysis also concerns the potential of personnel including teachers in schools and lecturers from outside schools as well as knowledge, skills, attitudes, and adequacy for development and management.

Curriculum; it is the analysis of requirements of the community and the parents and students' interests as well as the tendencies of necessary work and skills for careers that are relevant to the potential of the area in order to be used for lesson selection and determination and for further lesson planning and curriculum development.

Learning management; it is the analysis of strengths, weaknesses, opportunities, and threats of the preparation of career education using learning resources in the area. It also includes the analysis of schools' readiness regarding teachers' teaching skills, such as career and entrepreneurship skills teaching, operational shops, media and

materials, and assessment methods according to the basic education core curriculum for further development planning.

Supervision; it is the study of purposes and principles and the analysis of strengths and weaknesses of career education management in order to plan and create understanding for appropriate supervision.

Step 2: Plan; it is the use of participatory principles and should invite personnel and related persons, including parents, community representatives, commissioners, educational service area officers, the sub-district administrative organization, the district agricultural extension office, the social development office, the private sector, foundations, and entrepreneurs in the area to participate in planning so that career education development is operated effectively and covers every important aspects;

Resource and learning resource management will be operated by preparing plans that are related to the mobilization of resources from concerned parties, understanding and cooperation plan for career education, building and training shop plan, budget usage plan, personnel allocation plan for managing staff to work on each part appropriately, for which, if there is any part that is lacking personnel, cooperation can be asked for from officials or the community, in which the allocation should be based on the needed qualifications, and personnel development plan in order to develop existing staff for more effective career teaching.

Curriculum; after the requirement analysis from the community, parents, and students, and the analysis of the potential of the area, schools should design an appropriate curriculum. For example, schools might invite the entrepreneur who is an expert of the career or vocational college to help select lessons and set up a clear career education lesson plan in order to meet the requirements and for the purpose of students becoming a complete person skilled in practicing the career and valuing their own culture and traditions. The development of lesson plans may be done by adjusting and implementing the curriculum of a vocational college or a short course from a skilled labor development center, developing it to be an additional lesson, such as cold weather flower cultivation, coffee planting, or hill tribe food, etc.

Learning management; which is grouping learners and providing them with consultation and counseling activities so that they have information to choose career courses that match their skills and interests. Furthermore, there should be preparation of

career information, schedules, and coordination with local lecturers and learning resources for further support.

Supervision; supervision should be planned appropriately, and it should cover the development of teaching and learning management, curriculum, and personnel. Supervision planning is the step in which teachers and supervisors plan the lesson plan together as well as set up objectives for both teachers and students, teaching results, teaching strategies, and learning and assessment support.

Step 3: Operation (Do=D); this step is to be practiced according to the plan continuously, and it covers various aspects as follows:

Resource and learning resource management. Regarding this aspect, it should be operated by organizing important activities, such as creation of participation of internal and external offices, such as vocational offices, skilled labor training centers, entrepreneurs, committees of the Basic Education Commission of Thailand, and teachers, for supporting and promoting career education. In addition, this can be done by organizing meetings and allowing everyone to brainstorm ideas, plan, and operate together, leading to awareness, positive attitudes, and right understanding about career education. Moreover, another activity is the mobilization of resources, including budget, materials, durable articles, and teaching and learning tools. Resource and learning resource management also includes personnel, for which staff should prepare classrooms, buildings, and operational shops as well as durable articles for career teaching. Schools should allocate or hire more career teachers or operate personnel development projects by sending teachers to join training seminars or by visiting other schools for more knowledge and skills related to career teaching.

Curriculum; this should be operated by preparing a complete curriculum documentation, including curriculum structure, course description, lesson structure, learning management plan, teaching and learning methods, and measurement and assessment approach, to be used as a teaching and learning manual.

Learning Management; learning management should be handled in both a theoretical and practical way, focusing on individual practice using learning resources within the area. It also includes learning management that offers students opportunity to earn a living while studying and to work as a trainee with an entrepreneur. Furthermore, there should be a chance where students can regularly present their work or

products to the public. More importantly, learning management should teach students to value virtues and living skills according to the philosophy of sufficiency economy.

Supervision; internal supervisors should be appointed in order to meet with teachers and survey problems occurring during career teaching, as well as to support knowledge, solve problems, and follow-up, monitor, and help teachers so that they can manage learning in the right direction according to the principles of career education.

Step 4: Monitoring operation (Check = C); it is the step of assessment in order to check if the operation is as planned, or not, and how much the plan is being followed. Monitoring covers the following aspects:

Resource and learning resource management; it should monitor and assess the appropriateness of learning resources, adequacy of resources, participation of concerned parties, and satisfaction and opinions of students and parents. Also, it should check and evaluate the appropriateness of knowledge and skills of teachers every semester for further development plan.

Curriculum; it should continuously monitor and assess the appropriateness of curriculum and lesson plans, applying the results to the adjustment of curriculum structure so that it remains up-to-date.

Learning management; there should be monitoring and assessment of learning management for teacher regularly, especially the monitoring of students' performance. Also, there should be schedule and lesson plan adjustment for the best model.

Supervision; There should be internal supervision continuously for the effectiveness of the operation, this may be done by informing in meetings or giving summarized documentation.

Step 5: Improvement and development (Action=A); it is the step that compiles monitoring results from various aspects to improve and develop continuously, which covers resource and learning resource management, curriculum, learning management, and supervision for complete development.

Educational methods according to the career education model for highland and remote area schools are connected as figure 4.2

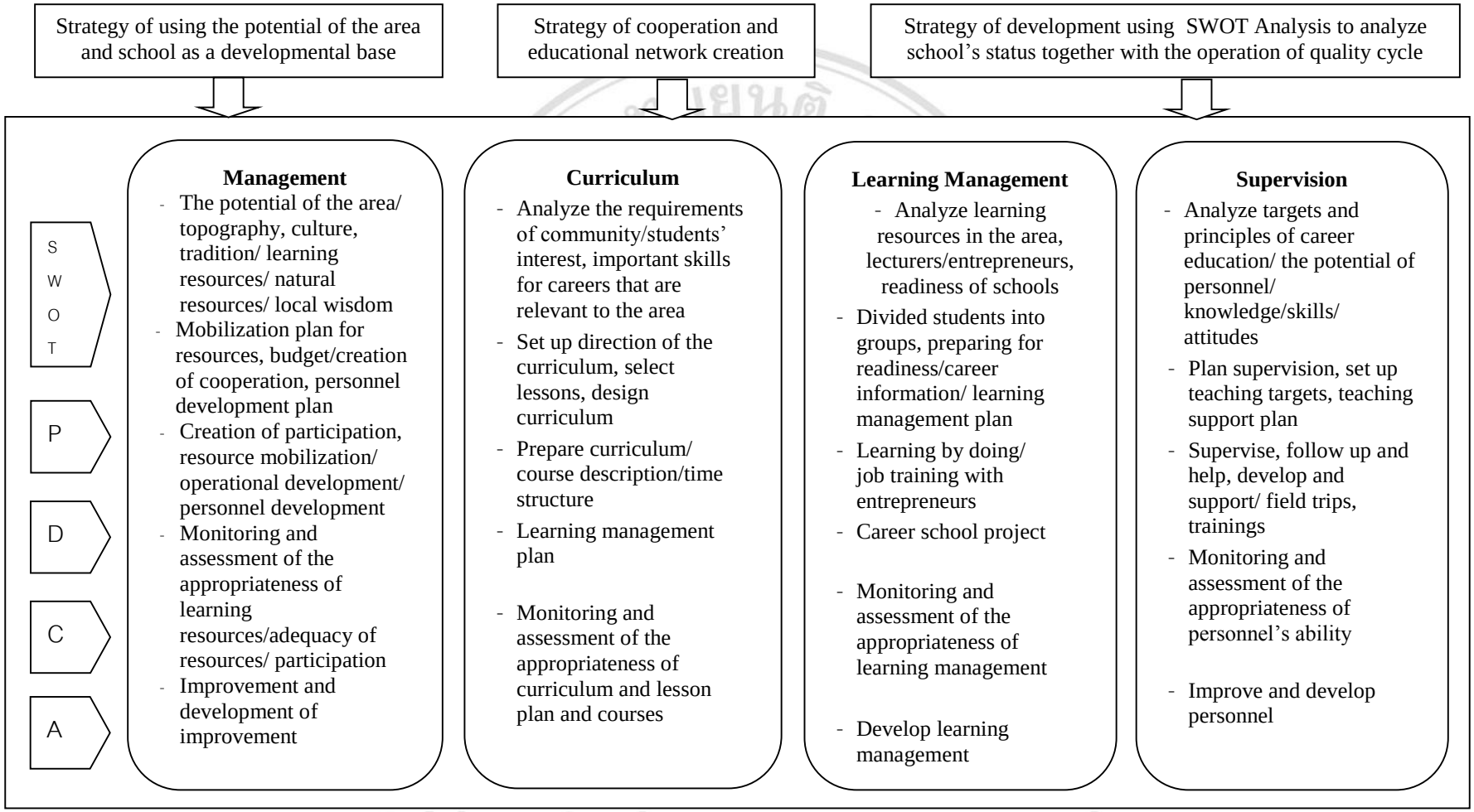

Figure 4.2 Framework of methods for career education for highland and remote area schools

3.1.6 Assessment and monitoring of the results of model application

The objectives of assessment and monitoring of the results of model application consisted of the following important matters:

a) The objectives of assessment and monitoring aim to assess the results obtained from using the model regarding the satisfaction of administrators, teachers, and commissioners toward career education and students' quality, including knowledge, skills, and positive attitudes.

b) The scope of the context of the assessment, which covers the elements of the potential of the area, participation, educational development network, and operational procedure of career education, including resource management, curriculum development, learning management, supervision and help, and students' quality, which included knowledge, skills, and positive attitudes toward careers.

c) The assessment should focus on the participation of every concerned party, which can be dominated in the form of a committee that consists of administrators, teachers, representatives from the Office of Basic Education Commission, representatives from the parents, and a development network to plan, operate, analyze, and summarize the operation together and report the results to the stakeholders. In addition, the operation committee should set up targets and success indicators by allowing every party to participate and agree.

d) Regarding data collection and tools for assessment and monitoring, beside the example of tools attached, schools can create their own tools accordingly, which should integrate both quantity and quality. Data can be collected from at least three sources, such as documents or the work done by administrators and teachers, interviews with concerned persons, satisfaction surveys, and behavior observations in order to use the obtained data to consider the assessment results according to the target of the model.

3.2 The results of quality monitoring of the career education model for highland and remote area schools

The results of quality monitoring of the career education model for highland and remote area schools, which were conducted with 50 experts who are related to career education for highland and remote areas, is shown as follows;

Table 4.21 Mean ($\overline{X}$) and Standard deviation of quality monitoring of the career education model for highland and remote area schools in an overall image

Monitored standards	**Results of quality monitoring of the model**		
	$\overline{X}$	**S.D.**	**Interpreted**
1. Feasibility	4.14	0.64	Good
2. Appropriateness	4.21	0.68	Good
3. Adequacy	4.12	0.64	Good
4. Utility	4.18	0.70	Good
5. Agreement	4.25	0.70	Good
6. Propriety	4.18	0.64	Good
Total	**4.18**	**0.67**	**Good**

From table 4.21, it is revealed that opinions toward the quality of career education model for highland and remote area school in an overall image are at the good level, and every aspect is also at the good level, of which the mean is between 4.12-4.25.

Table 4.22 Mean ($\overline{X}$) and standard deviation (S.D.) of quality monitoring results of the career education model for highland and remote area schools regarding feasibility

Monitored issues	Results of quality monitoring of the model		
	$\overline{X}$	S.D.	Interpreted
1. Feasibility of using the potential of the area for career education	4.20	0.61	Good
2. Feasibility of using participation in career education	4.04	0.73	Good
3. Feasibility of the career an education procedure that consists of curriculum development, learning and teaching, supervision, and resource management	4.24	0.63	Good
4. Feasibility of the overall model that can be applied practically to highland and remote area schools	4.18	0.60	Good
Total	**4.17**	**0.64**	**Good**

From table 4.22, it is revealed that the overall feasibility of the career education model for highland and remote area schools is at the good level, of which the mean is 4.17, and the quality of each issue is also at the good level, where the mean is between 4.04 – 4.24.

Table 4.23 Mean ($\overline{X}$) and standard deviation (S.D.) of quality monitoring results of the career education model for highland and remote area schools regarding appropriateness

Monitored issues	Results of quality monitoring of the model		
	$\overline{X}$	S.D.	Interpreted
1. The model is appropriate and correct according to academic principles	4.22	0.68	Good
2. The model is suitable according to sustainable development of education management	4.20	0.70	Good
3. The model is appropriate according to the education reform approach	4.26	0.72	Good
4. The model is appropriate according to the development principle by using schools as a base	4.20	0.70	Good
5. The model is appropriate according to methods for career education	4.20	0.67	Good
6. The model is appropriate according to the context of highland and remote area schools	4.14	0.7	Good
7. The model is appropriate for career skills development for highland and remote area students	4.22	0.58	Good
Total	**4.21**	**0.68**	**Good**

From table 4.23, it is revealed that opinions toward the career education model for highland and remote area schools regarding appropriateness of the model in an overall image is at the good level, of which the mean is 4.21, and considering the issues one by one, it is found that every issue is at the good level as well, for which the mean is between 4.14 – 4.26.

Table 4.24 Mean ($\overline{X}$) and standard deviation (S.D.) of quality monitoring results of the career education model for highland and remote area schools regarding adequacy.

Monitored issues	Results of quality monitoring of the model		
	$\overline{X}$	S.D.	Interpreted
1. Related factors that mentioned that the model is adequate for career education for highland and remote area schools	3.92	0.70	Good
2. The purpose of the model is adequate for career education for highland and remote area schools	4.24	0.59	Good
3. Development strategies that mentioned that the model is adequate for making career education for highland and remote area schools successful	4.14	0.57	Good
4. Operation processes, including curriculum development, learning and teaching, resource management, and supervision, are adequate for the development of students from highland and remote areas to have career knowledge and skills	4.18	0.63	Good
5. Assessment and following up that mentioned that the model is adequate for the operation's quality monitoring	4.12	0.69	Good
Total	**4.12**	**0.64**	**Good**

From table 4.24, it was found that the overall image of adequacy of the career education model for highland and remote area schools is at the good level, for which the

mean is 4.21, and when considering the issues one by one, it is revealed that every issue is at the good level, for which the mean is between 3.92 – 4.24.

Table 4.25 Mean ($\overline{X}$) and standard deviation (S.D.) of quality monitoring results of the career education model for highland and remote area schools regarding utility.

Monitored issues	**Results of quality monitoring of the model**		
	$\overline{X}$	**S.D.**	**Interpreted**
1. The model is useful for the development of students in highland and remote areas	4.24	0.69	Good
2. The model is useful for teacher and administrator development in highland and remote areas	4.14	0.73	Good
3. The model is useful for the effectiveness of career education for highland and remote area schools	4.20	0.67	Good
4. The model is useful for the development of community in highland and remote areas	4.12	0.69	Good
Total	**4.18**	**0.70**	**Good**

From table 4.25, it is revealed that opinions toward the career education model for highland and remote area schools regarding utility in an overall image is at the good level, for which the mean is 4.18, and when considering the issues one by one, it is found that every issue is at the good level too, where the mean is between 4.12 – 4.24.

Table 4.26 Mean ($\overline{X}$) and standard deviation (S.D.) of quality monitoring results of the career education model for highland and remote area schools regarding agreement.

Monitored issues	Results of quality monitoring of the model		
	$\overline{X}$	S.D.	Interpreted
1. Principles of the model offer opportunities for the stakeholders to agree with each other	4.26	0.69	Good
2. Purposes of the model offer opportunities for the stakeholders to agree with each other	4.22	0.71	Good
3. Operation of the model offers opportunities for the stakeholders to agree with each other	4.24	0.69	Good
4. Relations of the model offer opportunities for the stakeholders to agree with each other	4.26	0.72	Good
Total	**4.25**	**0.70**	**Good**

From table 4.26, it is revealed that opinions toward the career education model for highland and remote area schools regarding agreement, in an overall image, are at the good level. of which the mean is 4.25. When considering the issues one by one, it was found that every issue is at the good level as well, for which the mean is between 4.22 – 4.26.

Table 4.27 Mean ($\overline{X}$) and standard deviation (S.D.) of quality monitoring results of the career education model for highland and remote area schools regarding propriety.

Monitored issues	Results of quality monitoring of the model		
	$\overline{X}$	S.D.	Interpreted
1. Operation according to the model supports teachers, administrators, and concerned persons to listen to each other opinions	4.14	0.67	Good
2. Operation according to the model helps to create values awareness of resources and environment in the community	4.08	0.60	Good
3. Operation according to the model helps to create values and acceptance of local wisdom	4.10	0.71	Good
4. Operation according to the model helps to create participation among concerned parties	4.22	0.62	Good
5. Operation according to the model helps to create support during working	4.12	0.56	Good
6. Operation according to the model helps to promote the responsibility of teachers and administrators for the development of education in highland and remote areas	4.42	0.67	Good
Total	**4.18**	**0.64**	**Good**

From table 4.27, it is revealed that opinions toward the career education model for highland and remote area schools regarding propriety, in an overall image, are at the good level, for which the mean is 4.18. In addition, every issue is also at the good level, of which the mean is between 4.08 – 4.42.

4.4 Part 4: The experimental results of applying the career education model for highland and remote area schools.

4.1 Basic information of the schools that applied the career education model to highland and remote areas as an experiment, showed the results from observations, interviews, and documentation analysis as follows;

1) The information of the school

Baan Paya Prai School is located at 111 Moo 6, Tuedthai sub-district, Mae Fa Luang district, Chiang Rai Province, under the educational service area of Chiang Rai area 3. The school offers classes from Kindergarten 1 to Matthayomsuksa 3. The area consists of 28 Rai, 3 Ngan, and 52 square Wa. Villages in the area are Baan Paya Prai Lao Jor, Moo 6, Baan Laoma, Moo 5, Baan Litu, Moo 11 and Baan Mai Pieng Faa (minority group near Burma border). There are 473 students and 24 teachers and employees.

People in the service area are hill tribe folk, such as the Lahu, Akha, and Yunan, so there is a problem of communication and language barriers which affects students' learning. Moreover, most of the parents are poor and not educated, they do not have a steady income, so that results in the lack of factors to support teaching and learning; they cannot afford for children to study at a higher level. When a school is located on the border, that is quite risky for diseases and drugs, so it is often that students are absent and their school performance is not at a satisfactory level. However, Baan Paya Prai School is an educational expansion school, so it gives educational services to the area at the high level.

2) The information of the potential of the area for career education.

The school is located in a community that consists of various tribes. People have inherited culture and traditions for a long time. Most of the parents are farmers and work in tea orchards. There are tea orchards and tea factories that offer good learning. There are groups created to support work and steady incomes. There is local wisdom about tea production, but the school has not yet adopted the idea nor surveyed information in order to analyze the potential of the area for career education.

3) The information regarding participation and educational development network.

The school supports and creates participation in career education in many ways. Furthermore, the community is strong and harmonious, and the people cooperated with the school very well, in which they mostly participated in the way of environmental development and activities organized by the school, such as sports day, and the alumni reunion. However, the community has not been participating in the education development plan or setting up a curriculum for career education, but it was found that the community is ready to support learning resources, especially for tea plantation and processing.

4) The information of resource and learning resource management.

The school organized its structure by dividing work into 5 aspects, including academy, policy and plan, student affairs support, general administration, and personnel. The analysis results of the school's status appeared in the operation plan. Even though personnel are skillful in the course they are teaching, there is still not enough teachers, while some of them lacked experience. It was not found that teachers graduated in a major that matched with career teaching. However, the school has a building that was prepared for a career classroom, but still lacks materials and durable articles. In terms of policy, the school set up its identity as a school that supports career education by promoting students to earn a living while studying so that they have options for their careers in the future. The school also provides a tea project as well as a pig and chicken farm for students.

5) The information of curriculum development.

The study results of documentation (SAR), school development plan, and school curriculum showed that the school set up its visions as follows.

"Baan Paya Prai School: Reform the system to be qualified according to educational standards. Manage administration structure to be relevant to educational standards with cooperation from everyone. Develop learning processes regarding technology in which students are the most important factor. Students are skillful in Thai language regarding reading, thinking, analyzing, and synthesizing. Students yearn for knowledge and morality. The school is a learning resource for learners and the community."

In addition, the target of students' quality stated that everyone who is at a learning age, including normal persons, disabled, or those who lack opportunity, shall receive 12 years of basic educational services equally and thoroughly. Every student shall

receive a quality education according to the basic education curriculum, and the school is strong in education management and administration.

Regarding the school curriculum, it was found that besides career and technology courses for basic learning, the school also provides additional courses to support career education for Matthayom students, which is a tea processing course for 1 unit, or 2 hours per week. This course is for Matthayomsuksa 1 -3; it is an additional course that is mandatory.

6) The information regarding learning and teaching: According to interviews with teachers and the study of school assignment, the school assigned teachers who have a physical education degree to be responsible for career and technology courses and the tea processing course, for which the teacher took students to do actual work in tea orchards, also joining the tea processing with the community.

7) The information regarding supervision: The study results of the self-assessment report (SAR) showed that the school supports education that focuses on students, but still lacks the tools for effective supervision. The interview with the career teachers who do not have degree in career teaching showed that they obtained teaching techniques by trying their best; the school did not send them to join career seminars or training. This is relevant to the information from the administrator that the school is still seeking for a way to develop their teachers, but there is not any training provided at the moment. So, the school occasionally supports teachers to organize a sales booth and join other offices to sell products.

4.2. The comparison of the results of the operation sequence and satisfaction toward career education of the administrators and teachers from the schools that applied the career education model, both before and after the experiment.

Table 4.28 The results of comparing means (μ) and standard deviations (σ) of operation sequence and satisfaction level toward career education of the administrators and teachers from the schools that applied the career education model in the aspect of the usage of the potential of the area before and after the experiment, using the percentage of development scores (PC).

Issues	Operation sequence					Satisfaction level				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
1. Study and survey information of career resources and analyze the potential of the area for career education.	3.12	0.68	4.13	0.68	32.37	3.46	0.72	4.13	0.68	19.36
2. The application of the potential of the area, including location, landscape, topography, and climate for career education.	3.50	0.78	4.00	0.78	14.28	3.50	0.59	3.79	0.72	8.28
3. The application of distinctive potential regarding natural resources for career education.	3.79	0.72	4.00	0.83	5.54	4.13	0.68	4.25	0.90	2.90
4. The application of culture and traditions of the area for career education.	3.33	1.10	3.25	1.03	-2.40	3.38	0.97	3.33	0.89	-1.47

Table 4.28 (continued)

Issues	Operation sequence					Satisfaction level				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
5. The application of culture and traditions of the area for career education.	3.33	1.10	3.25	1.03	-2.40	3.38	0.97	3.33	0.89	-1.47
6. The application of distinctive potential of ways of living and occupations for career education.	3.71	0.86	4.21	0.88	1.43	3.54	0.78	3.79	0.72	7.06
7. The application of distinctive potential of human resources and local wisdom for career education.	3.46	0.88	3.88	0.80	12.13	3.33	0.87	3.42	0.97	2.70

From table 4.28, it is revealed that most of the means of operation sequence and satisfaction toward career education of the administrators and teachers from the schools that applied the career education model in the aspect of the potential of the area, before and after the experiment, have increased, especially in the aspect of the study and survey of information, career resources, and the application of distinctive potential of ways of living and occupations for career education. However, it is only the aspect of the application of culture and traditions for career education that decreased after the experiment.

Table 4.29 The results of comparing means (μ) and standard deviations (σ) of operation sequence and satisfaction level toward career education of the administrators and teachers from the schools that applied the career education model in the aspect of participation and educational development network, before and after the experiment, using the percentage of development scores (PC).

Issues	Operation Sequence					Satisfaction Level				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
1. Coordination and participation creation of the school with personnel in the school for career education.	3.42	0.97	4.21	0.88	23.09	3.42	0.93	3.71	0.86	8.47
2. Coordination and participation creation of the school with parents and community in the service area for career education.	3.38	0.97	3.79	0.72	12.13	3.25	1.03	3.46	0.72	6.46
3. Coordination and participation creation of the school with local government offices for career education.	3.33	0.82	3.46	0.66	9.90	3.25	0.79	3.12	0.68	- 4.00
4. Coordination and participation creation of the school with vocational schools, universities, or other government sectors for career education.	3.08	0.78	2.96	1.08	- 3.89	3.25	0.85	3.12	0.68	- 4.00

Table 4.29 (continued)

Issues	Operation Sequence					Satisfaction Level				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
5. Coordination and participation creation of the school with private sectors or foundations for career education	3.54	0.66	3.79	0.72	7.06	3.58	0.83	3.71	0.86	3.63
6. Coordination and participation creation of the school for education development plan for career education.	3.75	0.79	3.88	0.80	3.46	3.67	0.76	3.46	0.88	- 5.67
7. Coordination and participation creation for setting up a curriculum for career education.	3.46	0.78	4.13	0.68	- 9.53	3.46	0.66	3.33	0.82	- 3.75
8. Coordination and participation creation of the school with other organizations in order to make learning resources for career education.	3.21	0.66	3.92	0.97	22.11	3.54	0.83	3.79	0.72	7.06
9. Coordination and participation creation for lecturers to provide knowledge to students as a part of career education.	3.17	0.70	3.79	0.72	19.55	3.50	0.72	3.75	0.79	7.14

Table 4.29 (continued)

Issues	Operation Sequence					Satisfaction Level				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
10. Coordination and participation creation of the support of materials, durable articles, and budget for career	3.29	0.91	3.46	0.78	5.17	3.29	0.75	3.46	0.66	5.17
11. Coordination and participation of the assessment of career education.	3.50	0.93	3.08	0.78	12.00	3.54	0.88	3.33	0.82	5.93

From table 4.29, it is revealed that after the experiment, the means of operation sequence and satisfaction level toward career education of the administrators and teachers from the schools that applied the career education model, in the aspect of participation and educational development network, have increased in all issues, such as coordination and creation of participation of the school's personnel and parents, community, private sector, and foundations for career education, in which it is participation in the manner of providing learning resources for career education. Regarding the operation sequences that have decreased after the experiment, which are: coordination and creation of participation with vocational schools, universities, or government sectors for career education and coordination and creation of participation for setting up curriculum and assessment for career education.

Concerning the satisfaction sequence, after the experiment, most of the administrators and teachers have gained more satisfaction, especially in the creation of participation of the school's personnel for career education and the coordination and creation of participation of lecturers to provide knowledge to students as well as to support materials, durable articles, and budget for career education.

Table 4.30 The results of comparing means (μ) and standard deviations (σ) of operation sequence and satisfaction level toward career education of the administrators and teachers from the schools that applied the career education model, in the aspect of resource and learning resource management, before and after the experiment using the percentage of development scores (PC).

Issues	Operation Sequence					Satisfaction Level				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
1. Resource management planning for career education	3.42	0.88	4.13	0.68	20.76	3.29	0.81	3.79	0.72	15.19
2. Setting up school's policy for career education	3.63	0.77	4.21	0.88	15.97	3.37	0.71	3.75	0.79	11.27
3. Preparing school's development plan for career education.	3.63	0.71	3.88	0.80	6.88	3.50	0.66	3.46	0.78	- 1.14
4. Preparing administration structure for career education.	3.42	0.72	3.63	0.77	6.14	3.29	0.69	3.37	0.71	2.43
5. Allocating suitable teachers for career education	3.54	0.72	3.71	0.86	1.12	3.50	0.83	3.71	0.86	6.00
6. Development of school's personnel for career education.	3.38	0.97	3.54	0.88	4.73	3.33	0.92	3.71	0.96	17.71
7. Support of materials, equipment, and durable articles of the school for career education.	3.75	0.79	3.96	0.81	5.60	3.67	0.70	3.71	0.86	1.09

Table 4.30 (continued)

Issues	Operation Sequence					Satisfaction Level				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
8. Creation of readiness regarding operation room or training shop for career education.	3.29	1.08	3.17	0.70	- 3.64	3.38	1.01	3.37	0.71	- 0.29
9. Supervision of the school for career education.	3.33	0.87	3.50	0.93	5.10	3.25	0.99	3.63	0.71	3.25
10. Collection of assessment results regarding resource management for development.	3.38	0.92	3.46	0.78	3.26	3.33	0.92	3.46	0.66	3.90

From table 4.30, it is revealed that after the experiment, the means of operation sequence and satisfaction toward career education of the administrators and teachers of the schools that applied the career education model, in the aspect of resource and learning source management, have increased. The issues that have the highest operation sequence are resource management planning and setting up school's policy for career education consecutively. Regarding the issues that its operation sequences have decreased are preparing school's administration structure and creation of readiness of operation room or training shop.

Concerning satisfaction, after the experiment, it shows that satisfaction has mostly increased. The issues that increased at the high level are development of school' personnel and school's supervision for career education.

Table 4.31 The results of comparing means (μ) and standard deviations (σ) of operation sequence and satisfaction level toward career education of the administrators and teachers from the schools that applied the career education model, in the aspect of curriculum development, before and after the experiment using the percentage of development (PC).

Issues	Operation Sequence					Satisfaction Sequence				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
1. Setting up the target of student quality for career education.	3.42	0.83	3.58	0.93	4.67	3.42	0.93	3.58	0.88	4.67
2. Setting up a vision for career education.	3.71	0.96	3.75	0.79	1.07	3.58	0.93	3.63	0.71	1.39
3. Preparing curriculum structure for career education.	3.58	0.88	4.13	0.68	20.39	3.42	0.83	3.75	0.79	9.35
4. Selection of context to be put in the curriculum for career education.	3.50	0.78	3.88	0.80	9.42	3.38	0.77	3.67	0.70	8.57
5. Preparing course descriptions to certify the school's career education.	3.54	0.72	3.96	0.81	11.86	3.38	0.71	3.71	0.86	9.76
6. Setting up methods of learning and teaching to use in the school's career education.	3.46	0.66	3.58	0.93	3.49	3.25	0.74	3.42	1.10	5.23
7. Setting up methods for measurement and assessment of career education.	3.42	0.83	3.54	0.72	3.50	3.25	0.85	3.33	0.82	2.46

Table 4.31 (continued)

Issues	Operation Sequence					Satisfaction Level				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
8.Public relations and creation of understanding about career teaching and learning process.	3.33	0.82	3.42	0.83	2.70	3.42	0.65	3.58	0.88	4.68
9.Arranging schedules that are appropriate with career teaching and learning.	3.38	1.01	3.71	0.96	9.76	3.29	1.08	3.00	1.14	8.81
10. Allowing students to choose courses according to their skills and interests.	3.21	1.25	3.42	0.83	6.54	3.08	1.18	3.46	0.66	12.33
11. Supervising and monitoring the results of school's curriculum development.	3.25	0.99	3.57	0.70	9.84	3.21	1.02	3.42	1.10	6.54
12. Collecting assessment results regarding curriculum development for further development.	3.42	1.10	3.50	0.78	2.33	3.33	1.09	3.50	0.78	5.10

From table 4.31, it was revealed that, after the experiment, operation sequence and satisfaction toward career education of the administrators and teachers from the schools that applied the career education model increased in the aspect of curriculum development. The issues that have the highest operation sequence are preparation of curriculum structure for career education, preparation of course descriptions for career education, selection of context to be put in the curriculum, and setting up appropriate schedules for career education. Regarding

satisfaction, all issues have increased, the issues that are at the highest satisfaction level are allowing students to choose courses according to their skills and interests, preparing course descriptions for career education, and preparing curriculum structure for school's career education.

Table 4.32 The results of comparing means (μ) and standard deviations (σ) of operation sequence and satisfaction level toward career education of the administrators and teachers from the schools that applied the career education model in the aspect of learning management, before and after the experiment using the percentage of development scores (PC).

Issues	Operation Sequence					Satisfaction Sequence				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
1. Theoretical and practical learning management.	3.54	0.98	3.96	0.81	11.86	3.50	0.98	3.75	0.79	7.14
2. Learning management having lecturers from outside or local wisdom folks.	3.25	1.03	3.57	0.92	9.84	3.21	1.10	3.42	1.10	6.54
3. Learning management using learning resources in the community.	3.50	1.02	3.88	0.80	9.42	3.29	0.96	3.58	0.88	8.81
4. Learning management using entrepreneurs.	3.00	1.14	3.08	1.32	2.66	2.96	1.23	3.08	1.32	4.05
5. Learning management in the form of a career camp.	2.96	1.12	3.21	1.25	8.44	3.00	1.18	3.11	1.25	3.66
6. Learning management in the form of s short course.	2.96	1.08	3.21	1.25	8.44	2.87	1.15	2.96	1.08	3.13
7. Learning management by providing site-training.	3.17	1.31	3.29	0.96	3.78	3.08	1.32	3.17	1.31	2.92

Table.32 (continued)

Issues	Operation sequence					Satisfaction Sequence				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
8. Learning management by allowing students to work on a career project.	3.75	0.85	3.57	0.70	4.80	3.62	0.92	3.75	0.71	3.59
9. Assessment focusing on actual practice.	3.58	1.21	3.62	0.92	1.11	3.42	1.14	3.54	0.98	3.50
10. Supervision and monitoring the results of school's learning management.	3.46	0.88	3.62	0.92	4.62	3.33	0.96	3.58	0.88	7.50
11. Collection of assessment results of learning management for further development.	3.38	1.01	3.50	0.98	3.55	3.29	1.08	3.00	1.14	0.30

From table 4.32, it is revealed that the means of operation sequence and satisfaction toward career education of the administrators and teachers from the schools that applied the career education model, in the aspect of learning management have increased after the experiment. The issues that are at the highest level of sequence are theoretical and practical learning management, learning management using learning resources in the community, and learning management by having lecturers from outside schools or local wisdom folks.

Regarding satisfaction, it has increased in every issue after the experiment. The issues that have increased satisfaction sequence are learning management using learning resources in the community, theoretical and practical learning management, and supervision and monitoring of learning management results.

Table 4.33 The results of comparing means (μ) and standard deviations (σ) of operation sequence and satisfaction level toward career education of the administrators and teachers from the schools that applied the career education model in the aspect of supervision, before and after the experiment using the percentage of development scores (PC).

Issues	Operation Sequence					Satisfaction Sequence				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
1. Planning the supervision for following up and providing help in order to be able to operate career education.	3.50	1.18	3.60	0.92	2.85	3.29	1.08	3.38	1.10	2.73
2. Supervision process for management development of career education.	3.38	1.06	3.42	0.83	1.18	3.25	0.99	3.34	0.96	2.76
3. Supervision process for curriculum development for career education.	3.42	1.10	3.75	0.79	9.64	3.33	1.01	3.62	0.92	8.70
4. Supervision process to develop teacher' ability of career education teaching.	3.50	1.14	3.68	0.88	5.14	3.33	1.05	3.50	1.14	5.10
5. Supervision process to develop cooperation and network for career education.	3.38	1.10	3.42	1.10	1.18	3.21	1.02	3.33	0.96	3.73

Table 4.33 (continued)

Issues	Operation Sequence					Satisfaction Sequence				
	Before		After		PC	Before		After		PC
	μ	σ	μ	σ		μ	σ	μ	σ	
6. Supervision process to develop measurement and assessment system for career education.	3.46	1.06	3.58	0.88	3.46	3.25	1.03	3.38	1.01	4.00
7. Following up and monitoring of the supervision results in order to provide helps for career education.	3.42	1.06	3.50	1.14	2.33	3.38	1.21	3.42	0.83	1.18
8. Collection of assessment results in the aspect of supervision for further development.	3.29	1.12	3.31	0.90	0.60	3.21	1.06	3.37	1.05	4.98

From table 4.33, it is revealed that the means of operation sequence and satisfaction toward career education of the administrators and teachers from the schools that applied the career education model in the aspect of supervision, have increased, and the issues that have the highest operation sequence are supervision process for curriculum development for career education, supervision process to develop teachers' ability of career teaching, and supervision process to develop a measurement and assessment system of career education consecutively.

Regarding satisfaction, the sequence has increased for every issue after the experiment. The issues of the sequence that have increased the most are supervision process for curriculum development for career education and supervision process to develop teacher's ability of career teaching consecutively.

4.3 Satisfaction of the administrators and teachers from the schools that applied the career education model toward the quality of students that results from implementing career education, before and after the experiment.

Table 4 .34 The results of comparing means (μ) and standard deviations (σ) of the administrators and teachers' satisfaction from the schools that applied the career education model toward the quality of students that results from implementing career education, before and after the experiment

Issues	Student quality level				
	Before		After		PC
	μ	σ	μ	σ	
Knowledge					
1. Students can discuss job hunting by various methods.	3.17	1.09	3.42	0.97	7.88
2. Students can analyze methods for entering the career world.	3.17	0.96	3.21	1.06	1.26
3. Students can indicate methods for career preparation.	3.38	0.97	3.46	0.88	2.52
4. Students can evaluate choices of careers that are relevant to their knowledge, skills, and interests.	3.42	1.06	3.46	1.06	0.58
5. Students can explain methods of working for a living.	3.54	1.02	3.79	0.88	7.06
6. Students can discuss steps of effective working.	3.46	1.02	3.47	0.88	0.29

Table 4.34 (continued)

Issues	Student Quality Level				
	Before		After		PC
	μ	σ	μ	σ	
Skills					
7. Students gain working skills that they can do correctly and systematically.	3.58	0.88	3.96	0.81	10.61
8. Students have skills to use equipment and tools to create work safely and know how to choose tools appropriate to the nature of work.	3.46	1.06	3.71	0.92	7.22
9. Students have management skills, which they can manage a work system (work individually) and a human system (work as a group) in order to finish work as planned.	3.42	0.97	3.54	1.02	3.50
10. Students have skills and processes of problem solving and can solve problems step by step, obtain observations and analytical skills, and can create and assess options.	3.29	0.91	3.35	1.03	1.82
11. Students have team work skills, can work with others happily, and know their own roles.	3.79	0.88	3.83	0.64	1.06
12. Students have skills to seek for knowledge, such as research, collection, observation, surveying, and recording.	3.42	1.10	3.58	0.88	4.67
13. Students have technological skills for careers.	3.50	1.18	3.57	0.85	2.00

Table 4.34 (continued)

Issues	Student Quality Level				
	Before		After		PC
	μ	σ	μ	σ	
Attitudes and characteristic for work					
14. Students are honest with their careers.	4.13	0.68	4.22	0.89	2.09
15. Students are generous with their colleagues.	4.00	0.78	4.05	0.54	1.25
16. Students work with justice.	4.00	0.83	4.21	0.44	5.25
17. Students are economical.	3.96	0.81	4.23	0.68	6.82
18. Students are hard-working persons.	4.25	0.90	4.31	0.54	4.25
19. Students are patient and willing to work.	4.21	0.88	4.33	0.32	2.85
20. Students are responsible persons.	3.88	0.80	3.90	0.56	0.52
21. Students are on time.	3.71	0.81	3.79	0.85	2.16
22. Students work carefully and know about safety.	3.71	0.92	3.88	0.90	4.58
23. Students are responsible for the environment.	3.83	0.64	3.85	0.58	0.52

From table 4.34, the means of satisfaction level toward the quality of students that results from career education for highland and remote area schools of the administrators and teachers from the schools that applied the career education model have increased, of which the issues of the sequence that have increased the most are: students gaining working skills so that they can work correctly and systematically, students can use equipment and tools to create work safely as well as know how to choose tools appropriate to the nature of work, and students have skills to manage a work system, work individually, manage a human system, and work as a group in order to finish work as planned effectively, consecutively.

4.4 Satisfaction of school commissioners toward the implementation of career education for highland and remote area schools after the experiment.

For the results of the interviews with the school commissioners on the matter of opinions and satisfaction toward career education of the schools that applied the model, the important issues found after the experiment were as follows:

1) Most school commissioners agreed that, for career education, the school is practicing in a good and suitable manner for the school's context because it helps students learn a career within their environment, and they can see examples of honest work. One of the commissioners mentioned that, "It is good that the school allows students to learn in the tea orchards, and they learn how to grow tea that we already have in the village." Another commissioner said that, "Seeing their parents work is good, at least they will realize how hard their parents work to earn money."

However, most of the school commissioners do not have adequate knowledge and understanding about models of education, or they emphasized points and directions of education management that cannot be compared with career education as to whether the school is practicing a more appropriate model than other schools or not.

2) Most school commissioners agreed that career education implementation meets with student and community requirements. They confirmed that the school offers a tea course and a farm animal course, and said that, "We have tea, children should know about tea; we have Mei San pig, so children should learn about that too." Another commissioner stated that, "parents want their children to know how to work, so after we provided this course, students came to ask me how to raise a pig."

3) As for opinions about the question career education helping develop students' skills or not, most commissioners agreed that it should take some time until they form a conclusion. However, it can educate students to have basic career knowledge. One of the commissioners said that, "At the moment we cannot say if students will take this career or not, but seeing them not afraid to work that is already good." Another commissioner said that, "Many students still like convenience; they do not help their parents during weekends; it should take some time to train them."

4) Most of the commissioners were satisfied with the knowledge, skills, and characteristics that the students obtained from joining career education. One of the commissioners said that, "This is good, children will work hard, know how to work, and

they will value the money they earn.", Another one said that, "I am very satisfied to see students know how to work, be responsible, and help their families; this is already good enough."

4.5 Students' accomplishments from the schools that applied the model of career education for highland and remote area schools.

For the results from the study using the check form to track students' accomplishments resulting from career education of the schools that applied the model variously, it was found that accomplishments are relevant to the model, of which are the usage of the potential of the area and development of career education as shown below:

Table 4.35 Details of students' accomplishments resulting from career education of the schools that applied the model. Accomplishment 1.

Issue	Main points
Accomplishment name /product:	Instant tea powder
Student's work from:	Matthayomsuksa 1-3
Learning from course:	Tea products
Teacher's opinions toward student's work:	It is student development so that they know how to develop and add value to the product they have in the area, and it helps them to see their career path.
Student's opinions toward the work:	Obtaining knowledge about tea processing to be a new product so that people can have tea in a more convenient way than the original way.

Table 4.36 Details of students' accomplishments resulting from career education of the schools that applied the model. Accomplishment 2.

Issue	Main points
Accomplishment name /product:	Lemon tea
Students' work from:	Matthayomsuksa 1-3
Learning from course:	Food club
Teachers' opinions toward students' work:	To provide skills of making and selling beverages using resources found in the area
Students' opinions toward the work:	Can apply knowledge to make it as a career.

Table 4.37 Details of students' accomplishments resulting from career education of the schools that applied the model. Accomplishment 2.

Issue	Main points
Accomplishment name /product:	Egg cake
Students' work from:	Matthayomsuksa 1-3
Learning from course:	Baking club
Teachers' opinions toward student's work:	To create positive attitudes toward careers, learning careers relevant to tea production, seeing career paths.
Students' opinions toward the work:	Obtain new experience, have fun, and actually sell the product.

From table 4.35 – 4.37, it is found that students' accomplishments resulting from career education of the schools that applied the model are instant tea powder, lemon tea drink, and baked egg cake, which are accomplishments resulting from using resources and the potential of the area. This shows development of knowledge, skills, and positive attitudes toward careers. In addition, students learn how to bake cakes, which are very good to have with tea, so they can forecast their career path and can continue to improve.

4.5 Part 5: Lesson visualization from the implementation of career education for highland and remote area schools.

The results of lesson visualization resulting from career education for highland and remote area schools are as shown in table 4.38 – 4.41.

Table 4.38 Review results of objectives and results of the operation applying the career education model.

Objectives	Results	Reasons
1. To educate students so that they have knowledge and skills of careers as well as experience that can be applied to their future careers appropriately with relevance to the context of highland and remote areas.	- Students obtained career knowledge and skills that are relevant to their own context. - Students obtained direct experience from career training.	- Schools set up additional courses appropriately. - Teachers used the learning-by-doing method.
2. To create positive attitudes toward careers for students so that they forecast career paths, which can be fundamental for higher education.	- Students started to have positive concepts and attitudes toward career learning. - Some students forecasted their career path.	- Teachers were able to root positive attitudes toward careers for students. - Learning processes from real entrepreneurs helped students forecast their career paths.
3. To create career learning opportunities for students in highland and remote areas so that they can find their interests and develop their potential.	- Students received career learning opportunities. - Cannot fully say yet that students have found their interests and skills.	- The schools provided career teaching and learning. - Available courses are not optional and students cannot choose based on their skills and interests.

From table 4.38, it was found that most results of career education implementation have met with the objectives, only on the issue of supporting students to find their skills and interests were schools not able to offer various career courses yet.

Table 4.39 Review results of procedures or activities that are the strengths of career education.

Strengths	Reasons / factors of good practice
Using the potential of the area for career education.	- The community was aware and paid attention. - Leadership of administrators who can persuade the community to believe in the school's direction of career teaching. - The readiness of learning resources and local wisdom that are fully available in the area.
Creation of participation with entrepreneurs in the area.	- Entrepreneurs need workers that have already been trained. - Existing relationships between the schools and entrepreneurs.
The support of budget for training materials for the schools.	- The administrators paid attention to and supported this. - The schools provided a supporting budget that that be acquired according to governmental criteria.
Curriculum modification to be suitable and relevant to career education.	- Career education curriculum provided a chance for the schools to arrange schedule structure and additional courses as needed. - Teachers and the administrators were aware of the importance of career education.

Table 4.39 (continued)

Strengths	Reasons / factors of good practice
Learning management using learning resources in the community.	- The administrators set up clear policy, so teachers were confident to take students to learn at learning resources. - The readiness of learning resources and local wisdom folks available in the community.

From table 4.39, it is revealed that procedures or activities that are the strengths of career education are:

The use of the potential of community to provide career education, as the community realized the importance of career education, due to the leadership of the administrators that can persuade the community to believe in the school's direction of career education and the readiness of learning sources and local wisdom that are fully available for everyone.

Creation of participation with entrepreneurs in the area, as the entrepreneurs need workers that have already been trained, while the schools already have a good relationship with them.

The support of budget for training materials as the administrators realized their importance and gave support by using the school's supporting budget that can be disbursed according to governmental criteria.

School's curriculum modification is to be suitable and relevant to career education, as the basic curriculum demands schools to arrange schedule structure and additional courses as needed, and the administrators and teachers realized the importance of career education.

Learning management using learning resources in the community as the administrators set up clear policy, so the teachers were confident to take students to learn outside schools at learning resources available in the community.

Table 4.40 Review results of procedures and activities that are the weakness of career education.

Procedures or activities that were operated	**Procedures or activities that were operated and were agreed that they were weaknesses, not according to plan or expected**	**Problems, obstacles, causes, factors that were not as planned.**
Creation of participation with local administrative organization	Asking for support of budget for training materials.	- Schools sent the project to the sub-district administrative office, asking for support not at the right period for budget allocation, so the budget was not distributed.
Resource and learning source management	- Teacher allocation - Preparing durable articles and operation rooms.	- The schools had limitations about teachers who have career knowledge and skills that matched with offered courses. - Teachers still lacked of learning management skills to help students with career education. - The schools still lacked the budget for building operation rooms and purchasing needed durable articles.

Table 4.40 (continued)

Procedures or activities that were operated	**Procedures or activities that were operated and were agreed that they were weaknesses, not according to plan or expected**	**Problems, obstacles, causes, factors that were not as planned.**
Curriculum development	- Additional courses	- Teachers still lacked skills to prepare course descriptions; therefore, curriculum lacked variety and did not meet with students' requirements. - Course descriptions could not clearly indicate learning results which affected the quality of learning.
Learning management	- Teachers' learning management process	- Teachers still taught using the old method; telling students' knowledge and then asking them to follow, rather than encouraging them to think and seek for more knowledge by themselves. - Activities were more like asking students to work, rather than training them with skills.

Table 4.40 (continued)

Procedures or activities that were operated	Procedures or activities that were operated and were agreed that they were weaknesses, not according to plan or expected	Problems, obstacles, causes, factors that were not as planned.
Supervision	- Following the internal supervision plan	- Supervisors, especially the administrators, had many tasks to do and sometimes were interrupted by work from outside school.

From table 4.40, it is revealed that procedures or activities that were the weaknesses of career education are:

Regarding creation of participation, especially in the aspect of getting budget support for training materials from local administrative offices, the schools sent in the project for consideration, in which it was not the right time to allocate the budget, so the school did not get the support.

Regarding resource and learning resource management, the weaknesses were limitations of personnel who lacked of knowledge and skills for operating career education.

Regarding curriculum preparation, the weaknesses are the lack of variety of courses in that they were not meeting with students' requirements, and course descriptions were not clear, which affected the quality of learning.

Regarding learning management, it was found that teachers still taught using the old method; telling students knowledge and then asking them to follow, rather than encouraging them to think and seek for more knowledge by themselves. In addition, activities were more like asking students to work, rather than training them with skills.

Concerning supervision, Supervisors, especially the administrators had many tasks to do and sometimes were interrupted by work from outside school, therefore they could not follow the supervision plan effectively.

Table 4.41 Review results of the requirement of tools, and support mechanism for more effective career education.

Issues that will be improved	Tools and support mechanisms that are needed for better operation.
Career teachers' ability to provide career education	- Train and develop personnel to have higher skills of teaching. - Hire personnel or lecturers who have skills and experience from outside.
Provide adequate tools and durable articles.	- Mobilize more resources and budget from outside.
Put students' products out for sale.	- Develop the school's marketing system.

From table 4.41, the review results of the requirement of tools and support mechanisms for more effective career education showed that the requirements consisting of: training and developing personnel to have higher skills of teaching or hiring personnel or lecturers who have skills and experience from outside, mobilizing more resources and budget from outside to purchase tools and durable articles adequately, and developing the school's marketing system in order to sell the students' products.

Table 4.42 Suggestions that should be followed, included modification and improvement for better and effective career education.

Issues that need to be modified	Reasons
Accurate ideas about career education for every level of personnel	Personnel's realization about the necessity and importance of career education will help support operation to run effectively, and every party will give cooperation.
Setting up clear and continuous school policy.	To create continuation for career education development, even though there will be a change at the personnel level.

Table 4.42 (continued)

Issues that need to be modified	Reasons
The office of basic education commission should improve support budget systems as well as qualifications of durable articles that are suitable for courses offered.	To provide learning more effectively, having enough training materials and durable articles that are relevant to the course.
The office of basic education commission should plan to produce and allocate career teachers to math with requirements from schools	To have personnel that have right knowledge and skills for the courses offered.

From table 4.42, suggestions that should be followed included the aspect of modification and improvement for better and more effective career education of the schools that applied the model are: creation of accurate concepts of career education for personnel at every level, for which any teachers who realizes the importance and necessity of career education will help the operation to run effectively and will gain cooperation from every party. At the same time, the schools should seek for a way to set up a clear and continuous policy for career education development in order to create continuation of development, even if there is a need to make changes at the personnel level. For the Office of Basic Education Commission, they should improve support personnel, budget, and durable article systems to be more adequate.