CHAPTER 4

RESULT AND ANALYSIS

This present study aims to 1) study problems in managing a collaborative educational inclusion approach for students with ADHD+EFDs in upper primary school, 2) develop a therapeutic program in executive functions for students with ADHD+EFDs in upper primary school, and 3) develop a collaborative inclusion model for students with ADHD+EFDs in upper primary school. The study used a mixed-design, including both qualitative and quantitative approach. A qualitative research design with semi-structured interviews and a focus group was used to explore parents' and teachers' perspectives by applying the F.S.C. method. A quantitative approach was used to collect data of the effectiveness and satisfaction of the therapeutic program in executive functions for students with ADHD+EFDs. The methodology of the research is divided into the following three stages:

Preparation Stage: The researcher explored general understanding of ADHD and the problems about managing a collaborative inclusion approach for students with ADHD+EFDs from two groups; the parent group and the teacher group (including the school principal). Simultaneously, the researcher developed a therapeutic program using computer software, paper and pencil format, as well as developed projects for parents, teachers, and peers.

Operation Stage: The researcher collaborated and arranged informational projects for parents, teachers, the school principal, and peers, as well as implemented the therapeutic program for students with ADHD+EFDs. In this stage, the researcher used Plan-Do-Check-Act (PDCA) cycle to encourage and improve the research processes for the students with ADHD+EFDs, and their environment factors, including the parents, the teachers, the school principal and the peers.

Evaluation Stage: The researcher evaluated the efficiency of the therapeutic program in student with ADHD+EFDs and evaluated the collaborative inclusion model from the students' GPA, as well as parent and teacher's satisfaction.

The sample group of this research was drawn from the inclusion model school of Chiang Mai's Educational District Area 1, Chiang Mai. The researcher purposively selected one school, Banchaechang (Teapananukul) School, from the 52 schools based upon the number of the students with ADHD in the school, and the attitude of the school principal, who agreed to participate in the project. The subjects are eight students with ADHD+EFDs, including working memory, planning and self-monitoring, problems, studying in upper primary school grades 4 – 6 in the 2015 academic year, at Banchaechang School. One school principal, five classroom teachers, and eight peers also participated in the study. The students with ADHD+EFDs and their parents all signed an informed consent or assent to participate in the study.

The data collection tools used for this research are the record forms for problems obtained from teachers, parents and the questionnaires evaluating perceptions and attitudes of students with ADHD+EFDs among the teachers and the peers. The instruments used to evaluate treatment outcome included the Behavior Rating Inventory of Executive Function (BRIEF), Tower of London-Drexel University (TOL^{DX}; Culbertson & Zillmer, 2005) (145) and the Revised Wechsler Intelligence Scale for Children [(WISC-R) Digit Span subtest]. While these tests were given in a test/re-test format, the questionnaire for parent and teacher satisfaction was completed after culmination of all the programs in the study.

The research findings are illustrated and described based upon the following topics:

1. The problems about managing a collaborative educational inclusion approach for students with ADHD+EFDs in upper primary school; problems in the past, the current situation, and the collaborative concepts in the future from both parents and teachers perspectives.

2. The effectiveness and satisfaction the therapeutic program in executive functions for students with ADHD+EFDs

3. A collaborative inclusion model for students with ADHD+EFDs in upper primary school.

From data analysis and interpretation of meanings in this study, the statistical abbreviations in statistics and the symbols used in presenting the results in this study are as follows.

Abbreviation or symbol	**Meaning**
ADHD	Attention-Deficit/Hyperactivity Disorder
EFDs	Executive Function Deficits
Mean	Average
SD.	Standard Deviation
N	Sample size
x	Arithmetic mean
df	the Degrees of Freedom
t	t- test (dependent)
Mdn	Median
Q.D.	Quartile Deviation
BRIEF	Behavior Rating Inventory of Executive Function
BRI	Behavior Regulation Index
MI	Metacognitive Index
GEC	Global Executive Composite
TOL^{DX}	Tower of London-Drexel University
WISC-R	The Revised Wechsler Intelligence Scale for Children
GPA	Grade Point Average
*	Significance at the $\alpha < 0.05$

The Results of Data Analysis in each topic

1. Problems about managing a collaborative educational inclusion approach for students with ADHD+EFDs in upper primary school; problems in the past, current situation, and the collaborative concepts in the future from both parents and teachers perspectives.

The findings of the qualitative data analysis from the focus groups on the basis of F.S.C. method reflect problems in managing a collaborative educational inclusion for students with ADHD in the past and current situation from the perspective of the parent and teacher groups separately. Then, the collaborative concepts for the future were derived from mixing the groups.

These findings below were obtained from both parents' and teachers' perspective regarding the problems about managing a collaborative educational inclusion for students with ADHD+EFDs in upper primary school. They discussed and reflected their insights and opinions in this problem in the past, current situation in a focus group by applying the F.S.C. method. The researcher separated collecting data in F.S.C method into two sessions in a single day, which included the teachers' group and session, and the parents' group. After that, the researcher managed the meeting again in the mixed group in session 3, which included the parents, the teachers and the school principal. In this session, all of the participants brainstormed ideas, reflected their opinion, shared experiences, discussed, and analyzed the information to create a collaborative concept of an ideal future. The information included what was successful in the past that could be reused, and what was unsuccessful that should be avoided. The participants were given five stickers to fix onto activities that they thought the most important, suitable, and possible for use in the near future. Finally, all of the participants determined a collaborative vision for the future using the programs provision or action plans for students with ADHD. The findings are as follows:

Findings:

1.1 Problems in the past

Parents' group

From the parents' perspective on past problems and situations in managing a collaborative educational inclusion for ADHD, there were three main themes: (a) inappropriate behaviors of students with ADHD at home, (b) the lack of knowledge and understanding about ADHD and the conflict between parents and grandparents in behavior modification, and (c) academic problems in students with ADHD. The contents of the group discussion follow:

Theme 1: Inappropriate behaviors of students with ADHD at home.

Parents analyzed the information from the past in both the home and school context. Many parents were concerned about problems of inappropriate behaviors of the students with ADHD at home; for example, one parent said:

"My son has a short attention span, trouble concentrating on his homework, trouble remembering many steps to take to complete tasks. He is also unaware of his behavior and how that behavior affects others."

Another parent said:

"At home, my son has a short attention span too. He can't complete his homework on time and always forgets to hand it in. Moreover, he has trouble remembering all information when I give two or three things to do."

Theme 2: Lack of knowledge and understanding about ADHD and conflict between parents and grandparents in behavior modification.

When discussing lack of knowledge and understanding about ADHD, most of the parents were concerned about how to react to their child or assist them at home. It was clear that most of the parents had the same problem; for example, one parent said:

"I have inadequate knowledge in ADHD, especially about appropriate strategies and techniques to improve my child's behavior at home. I know he has problems in academic and school behaviors too, but I don't know how to help him."

Another parent said:

"I know about the nature of ADHD, but don't know how to help my son. He has many problems at school and at home. I need more knowledge in the intervention program at home or an appropriate strategies to help him."

Moreover, the parents agreed that they frequently had conflicts with the child's grandparent in behavior modification; for example, two other parents said:

"I have a big family, the problems occur when I want to practice behavior modification on the basis of correct principles on my child such as training discipline and responsibility, but the granparents do not agree or allow me to do so. They insist that my child is too young to practice. I think the conflict on child care methodology between the family members impacts the children's behaviors and emotions."

Theme 3: Academic problems in children with ADHD.

Some parents talked about the problem of the children's academic performance; for example, one parent said:

"*My son still has a big problem in functioning in school, he has difficulty reading and writing. He has trouble concentrating on school tasks. Moreover, he has had low academic grades for three consecutive years."*

Another parent said:

"*In the school, my son has trouble concentrating on school tasks too. He has problems reading and in math. He doesn't check the mistakes of his school work."*

Teachers' group

The teachers' perspective on problems and situations in managing a collaborative educational inclusion approach for ADHD in the past were also separated into three themes: (a) lack of knowledge and understanding about ADHD, (b) lack of collaboration between the home and school, and (c) the many responsibilities and workload of the teachers at school. The contents of group discussion follow:

Theme 1: Lack of knowledge and understanding about ADHD.

The teachers discussed problems and situations in managing a collaborative educational inclusion approach for students with ADHD in a school context in the past.

All of the teachers lacked knowledge and understanding about ADHD, and they were not clear about the symptoms of ADHD. For example, a teacher said:

"*What can I do to help them in the classroom? I am not sure of my knowledge of ADHD. All of them have normal IQ, but why is it difficult for them to remember things? Why do they have low academic performance?"*

Another teacher said:

"*I am not clear about the symptoms of students with ADHD. Some of them have good attention but they still get poor grade. In my class, two students with ADHD always forget to hand in their homework."*

Theme 2: Lack of collaboration between home and school

The teachers shared their opinion regarding the lack of collaboration between home and school in a school context. One classroom teacher stated:

"More than ten years ago, the school did not consider a collaborative program as much as the present and most teachers' heavy workload affected the lack of collaboration between home and school."

Another teacher said:

"In the past, teachers lacked collaboration between the home and school. In other words, the teachers lacked a means of communicating with the parents. Because everyone had to work, there was no time for the teachers to discuss the issue individually with each child's parents. Moreover, communication technology was limited and was difficult to access in the past."

Theme 3: Many responsibilities and strenuous teacher workload at school

The teachers provided information and discussion about their responsibilities at school stating that all of them had many responsibilities and a demanding classroom and the school-related workload. In sharing their opinion about this problem, one classroom teacher said:

"In the past, the teachers were trained to take care of special children, who were not specified as having ADHD at that time. Unfortunately, not all of these teachers used that knowledge in their duties because their heavy workload prevented them from interacting with the children. There are not many teachers at school, so one teacher has to be responsible for doing so many various duties."

Another teacher said:

"All day in the school, I have to do numerous duties while I also must teach all subjects including math, language, science, agriculture, art, etc. I simply don't have time to take care of special needs children."

Both parents' and teachers' perspectives reached a consensus on this issue, which was the lack of knowledge and understanding about ADHD and how to help the children at school and home.

1.2 Current situation

Parent's group

The parents' perspective on managing a collaborative educational inclusion approach for ADHD in the current situation can be separated into three themes: (a) parents have more knowledge about ADHD than in the past, (b) parents and teachers are working together to help their children more than in the past, and (c) ongoing academic problems for students with ADHD remain.

Theme 1: Parents have more knowledge about ADHD than in the past

Presently, parents of students with ADHD have more knowledge about ADHD symptoms than they did in the past. However, they still need to know more information to help their child at home; for example, one parent said:

"I have more knowledge about ADHD than in the past, but I still don't know how to improve my kid's academic performance. I think that specific techniques are necessary for me."

Another parent said:

"I have more knowledge about the nature of ADHD, yet I still need to know about the strategies and more techniques to support my son at home. I believe that this information will enhance his school performance too."

Theme 2: Parents and teachers are working together to help their children more than they used to in the past.

In the current situation, parents and teachers are working together more than in the past. Teachers contact the parents by phone when their child has some problems at school; for example,

"My kid always forgets to hand in his homework, so his teacher calls me and gives me some suggestions to help solve this problem."

Another parent said:

"At present, my son's classroom teacher calls me when he has inappropriate behaviors at school and gives me some suggestions to help solve the problem."

Theme 3: Ongoing academic problems for students with ADHD remain.

The last situation that was presented by all parents was that students with ADHD still have academic problems; one parent informed the researcher:

"I worry about problems with reading and writing. My son still has trouble studying in the classroom."

Another parent said:

"My son stills has poor grades and low academic performance. He has trouble studying math and Thai language in the classroom".

Teachers' group

From the teachers' perspective on managing a collaborative educational inclusion approach for ADHD in the current situation, there were three key themes: (a) teachers presently have more knowledge about ADHD than in the past, (b) there are ongoing academic problems in ADHD students, and (c) more government funding is needed to support the school.

Theme 1: Teachers have more knowledge about ADHD than in the past.

Currently, the school in this present study assigned a single teacher to attend the training program for students with special needs. Afterwards, the teacher transfers the knowledge to her/his colleagues in school, which enables them to have more knowledge

to teach students with special needs. However, this approach may not be adequate as all of the teachers in the focus group wanted to know about the instructional strategies when teaching a student diagnosed with ADHD. One teacher said,

"Now, I think I have more knowledge about ADHD than I did more than in five years ago. I understand the symptoms and behaviors of the students with ADHD, but I still need more details in techniques to enhance ADHD student learning in the classroom. Moreover, I want to know how to help support ADHD students in general education classes."

Another teacher said:

"I know that I have greater knowledge about teaching children with ADHD than in the past. I also believe that specific techniques can support and encourage students with ADHD's performance in the classroom."

Theme 2: Ongoing academic problems in students with ADHD persist.

Many teachers provided their opinions about academic situation for students with ADHD. From the past to the present, the students still have problems in education such as difficulty reading, writing, and calculating. Quotes from several teachers about this matter follow:

"He has trouble in reading comprehension and remembering tasks that have more than one step."

Another teacher said:

"In my class, two students with ADHD still have difficulties in mathematics and spelling. They have trouble remembering things and have a short attention span. They also need more help in the classroom than their peers."

Theme 3: Schools need more government funding to support Thai schools.

Most teachers included another present key topic. They highlighted the increased funding from the Thai government in comparison with past funding.. For example, one teacher said:

"*Presently, the Thai government has policies to support inclusive education in our schools, unlike ten years ago. Every inclusive education school receives a specific budget for purchasing the necessary equipment for students with special needs."*

Another teacher said:

"*This year, the Thai government continued to support a budget for purchasing necessary equipment for students with special needs. The sum depends on the number of students with special needs."*

Parents and teachers reached a consensus in their opinion about the academic problems in ADHD students. Both groups concurred that they still needed more training in using specific techniques to enhance the children's performance in the school and at home. Another problem that was identified was the teachers' massive workload at school. Additionally, the participants discussed conflicts between the parents and the grandparents regarding parenting practices and behavior modification at home. The participants recognized that this conflict could lead to academic problems for ADHD students.

After the completion of the 2 days of F.S.C method meetings, problems with managing an educational inclusion for students with ADHD in the past to present were identified and collaborative concepts for the future from both parents and teachers were explored. Collaborative concepts in the future from both parents and teachers will be discussed next.

1.3 Collaborative concepts in the future from both parents and teachers

Teacher and parent perspectives were analyzed and categorized into four themes: (a) giving knowledge to people relating to the students with ADHD at school and at home, (b) fostering collaboration among the teachers, the parents and the therapist, (c) employing a Buddy system, and (d) using computer software programs. The findings were as follows:

Theme 1: Giving knowledge to people relating to the students with ADHD at school and at home.

Both parents and teachers agreed that knowledge about ADHD was very important. If everyone understood the children, the symptoms of the disease, as well as ways to provide support to these children, then the children would be much better off in the realms of their behaviors and study. For example, one parent said:

"*I know that he has ADHD, but I don't understand why he has a normal IQ but he still doesn't have better study results. I don't understand why he forgets everything that he is taught, and why he doesn't submit assignments and homework. If I had more knowledge, I could support him more efficiently."*

One teacher added her opinion. She said:

"Everyone around the children has to understand the symptoms and how to play their role in supporting these ADHD children."

Theme 2: Fostering collaboration among the teachers, the parents and the therapist.

Most of the teachers and the parents understood that collaboration with an educational team was very important. For example, one teacher said:

"We know that working together between the home and school is very essential for students with ADHD. I think that an effective collaboration with a team can promote better academic function in students with ADHD."

Students with ADHD have to participate in life both in school and at home, so they also received the program input both at home and school too. In the focus group, all the participants needed to collaborate among teachers, parents and therapists, especially with the occupational therapist and the special education teacher. For example, one teacher said:

"*The program for students with ADHD can be done both at home and school. In a classroom setting, teachers can use intervention strategies while the students are studying in each subject. At home, parents play a role in helping their child with reading and writing, as well as in monitoring the child's behavior."*

Another teacher said:

"*Collaboration with the specialist is very important. We needed to collaborate or work with the therapists who have knowledge in ADHD to suggest the intervention program or specific strategies, especially with the occupational therapists and special education teachers."*

Theme 3: Employing a Buddy System.

Most teachers and parents suggested that students with ADHD should be assigned buddies who could help them in school. They believed that a quality buddy had a positive impact on the ADHD students' behaviors and school. For example, one teacher said:

"*We used to have normal students be buddies of ADHD students who had problems learning in the class. When they had friends who encouraged them to practice, they performed better.*"

In another example, one parent agreed and provided more detail, she said:

"*Friends are crucial. When the children are close to them, and they are encouraged by them during the lesson, they have great and powerful support."*

Themes 4: Using computer software programs.

In the discussion both parents and teachers agreed that learning through a computer is relevant to the children's interests, which can draw their attention to the study content more effectively. For example, one parent confirmed:

"He loves to play computer games so much. I notice that he can sit and concentrate longer than when he does other things, like writing. Therefore, I think if we could put the study lessons into a computer context for the child to learn, it could really help. Moreover, some games are designed to encourage concentration and memory."

One of the purposes in this research was to develop a therapeutic program in executive functions for students with ADHD+EFDs. The researcher developed this program in the Preparation Stage at the same time as the FSC method. This method gathered information from both parents' and teachers' perspectives about the problems in managing a collaborative educational inclusion approach for students with ADHD+EFDs in the past, and at present. The obtained information was then analyzed to create collaborative concepts of an ideal future. One of the results of the collaborative concepts or the action plans from both parents and teachers were to use computer software programs. They agreed that learning through a computer was relevant to the children's interests, and recognized that computers can be used to draw student attention so that they can study the content more effectively.

Overall, the researcher developed a therapeutic program (computer software format as well as paper and pencil format) based on developmental frame reference and research which was related to the intervention in working memory, planning, and monitoring for students with ADHD. In addition, the therapeutic program involved some parts of the results from .FSC method; namely, computer software programs in working memory training. After that, in the Operation Stage, the researcher implemented a therapeutic program for students with ADHD+EFDs (see the detail of the program in Chapter 3) to enhance executive function, specifically in working memory, planning and self-monitoring for students in the sample group – the students with ADHD+EFDs. The total operation period was 21 times within 7 weeks. The students with ADHD+EFDs attended the program 3 times a week, and the program took one hour each time (16,41). The effectiveness of the therapeutic program in executive function for students with ADHD+EFDs is presented below.

2. The effectiveness of the therapeutic program in executive functions for students with ADHD+EFDs

The effectiveness of therapeutic program in executive functions for students with ADHD+EFDs intervention effect was analyzed using Wilcoxon Signed Ranks Test. The results indicated significant improvements with a large effect size based upon the BRIEF teacher scores in all components, Parent BRI, Parent GEC. The teachers reported better executive functions in school than the parents reported for home. No significant improvements were found on the BRIEF parent scores in working memory, planning, and monitoring. On the TOL^{DX}, the study found significant improvements with a large effect size in the total initial time, total execution time, and total time after intervention variables. The children initiated the tasks with thoughtful preparation and planning in a timely manner and also completed the tasks in less time, which was similar to that was reported on the BRIEF (Teacher). On the WISC-R (Digit Span subtest), the results in the working memory component indicated significant improvements with a large effect size. The result of the data analysis before and after the use of the therapeutic program in executive function for students with ADHD+EFDs is shown in Table 4.1-4.5.

Table 4.1. Scores on the BRIEF, TOL^{DX}, and WISC-R Before and After the Therapeutic Program in Executive Function Intervention (N = 8)

Assessment Tools	Pretest Mdn (Q.D.)	Posttest Mdn (Q.D.)	Pre–Post Comparison Wilcoxon Signed Rank Test (*p*)	Effect Size Hedge's g
BRIEF (T score)				
Parent Working Memory	60.00 (7.25)	59.00 (6.75)	-1.44 (.150)	0.36
Parent Plan	64.50 (4.50)	58.00 (8.00)	-1.70 (.090)	0.43
Parent Monitor	60.50 (7.25)	59.00 (6.25)	-1.90 (.058)	0.48
Parent BRI	54.50 (4.75)	45.50 (5.88)	-2.53 (.011)*	0.63
Parent MI	61.00 (5.75)	58.50 (6.50)	-1.91 (.056)	0.48
Parent GEC	57.00 (3.75)	52.50 (5.88)	-2.39 (.017)*	0.60
Teacher Working Memory	86.00 (5.38)	54.00 (11.50)	-2.38 (.017)*	0.60
Teacher Plan	82.00 (5.63)	53.50 (4.63)	-2.39 (.017)*	0.60
Teacher Monitor	84.50 (8.13)	49.00 (8.38)	-2.38 (.017)*	0.60
Teacher BRI	80.50 (11.50)	45.00 (3.88)	-2.37 (.018)*	0.60
Teacher MI	84.00 (7.00)	50.50 (7.13)	-2.38 (.017)*	0.60
Teacher GEC	85.00 (9.00)	49.50 (5.00)	-2.38 (.017)*	0.60
TOL^{DX}(standard score)				
Total moves	95.00 (7.00)	106.00 (12.50)	-0.56 (.574)	0.14
Total correct	82.00 (3.75)	90.00 (5.00)	-1.89 (.059)	0.47
Rule violation	104.00 (0.00)	104.00 (0.00)	-1.00 (.317)	0.25
Time violation	110.00 (11.25)	110.00 (1.50)	-1.47 (.141)	0.37
Total initial time	91.00 (3.00)	98.00 (4.50)	-2.21 (.027)*	0.55
Total execution time	103.00 (12.50)	117.00 (4.50)	-2.38 (.017)*	0.60
Total time	106.00 (13.00)	119.00 (5.00)	-2.17 (.030)*	0.54
WISC-R (subtest)				
Digit span	9.50 (1.75)	12.00 (0.75)	-2.53 (.011)*	0.63

Note. BRIEF = Behavior Rating Inventory of Executive Function; BRI = Behavior Regulation Index; MI = Metacognitive Index; GEC = Global Executive Composite; TOLDX = Tower of London-Drexel University; GPA = Grade Point Average ; Mdn = median; Q.D. = Quartile deviation, * p<.05

Table 4.1 illustrates the median score of the executive functions components; working memory, planning, and self-monitoring of students with ADHD+EFDs assessed through BRIEF, TOL^{DX}, and WISC-R before and after the use of a therapeutic program designed to develop the executive function of students with ADHD+EFDs.

Within-group analysis revealed that the changes on the BRIEF (Parent) exhibited statistically significant improvements after intervention in the median scores of Behavior Regulation Index and Global Executive Composite with the large effect sizes (p<.05). However, there were significant results in the working memory, planning, and monitoring scales. The BRIEF (Teacher) revealed statistically significant improvements after intervention in the median scores of working memory, planning, monitoring, Behavior Regulation Index, Metacognitive Index and Global Executive Composite scale with a large effect sizes. The scores improved (decreased) after intervention in all students with ADHD+EFDs (p<.05).

The TOL^{DX} standard scores revealed statistically significant improvements after intervention in the median scores of the "Total initial time,", the "Total execution time," and "Total time" variables with a large effect sizes (p<.05) but no significant findings were found in the following variables: the "Total moves," "Total correct," the "Rule violation," and the "Time violation."

The WISC-R (Digit Span subtest) scores exhibited statistically significant improvements after intervention with the large effect sizes (p<.05).

By using the therapeutic program in executive function for eight students with ADHD+EFDs, the researcher successfully collaborated with the parents, teachers, and peers, which included eight buddies and all classroom peers, engage in the activities to give knowledge about ADHD+EFDs. The results have been presented in the Table 4.2.

Table 4.2. Comparison of Attitudes of the Students with ADHD+EFDs Amongst the Teachers Before and After Giving Knowledge about ADHD+EFDs Analyze Statistically by Wilcoxon Signed-Ranks Test (N=6)

Variables	Before and After giving knowledge	Mdn	Q.D.	The Wilcoxon signed ranks test	*p*- value
Attitude	Pre	49	2.13	-2.207	.027*
	Post	55	1.88		

*p<.05

From the result shown in Table 4.2, all of the teachers had significantly increasing scores for the attitude variable about ADHD+EFDs after receiving new information at p <.05.

Table 4.3. Comparison of Attitudes and Knowledge Amongst Peers Before and After Giving Knowledge about ADHD+EFDs Analyze Statistically by t-test (N=55)

Variables	Pre and Post giving knowledge	Mean	S.D	t-test	df	p-value
Attitude	Pre	53.22	10.24	3.19	54	.002*
	Post	58.45	8.19			
Knowledge	Pre	13.49	3.14	10.15	54	.000*
	Post	15.76	2.68			

*p<.05

From the result in Table 4.3, all of the peers had significant increases in their scores on the attitude and knowledge variable about ADHD+EFDs after having received knowledge at p <.05.

3. A Collaborative Inclusion Framework for Students with ADHD+EFDs in Upper Primary School.

This research aims to develop a collaborative inclusion model for students with ADHD+EFDs in upper primary school. This model of practice is based on the conceptual ideas of the Person Environment Occupation Performance Model (PEOP Model). The person component consists of the children with ADHD and executive function impairment in the areas of working memory, planning and self-monitoring. The environment consists of the parents, teachers, the school principal, occupational therapist, and peers. The occupation includes behavior management in functional tasks and the goal of task that the child needs or wants to do in their life. Participation for students with ADHD is defined as involvement in everyday life situations, which include daily occupations in a school setting, and environmental factors at home. A collaborative inclusion Framework for students with ADHD+EFDs in upper primary school is presented in Figure 4.1.

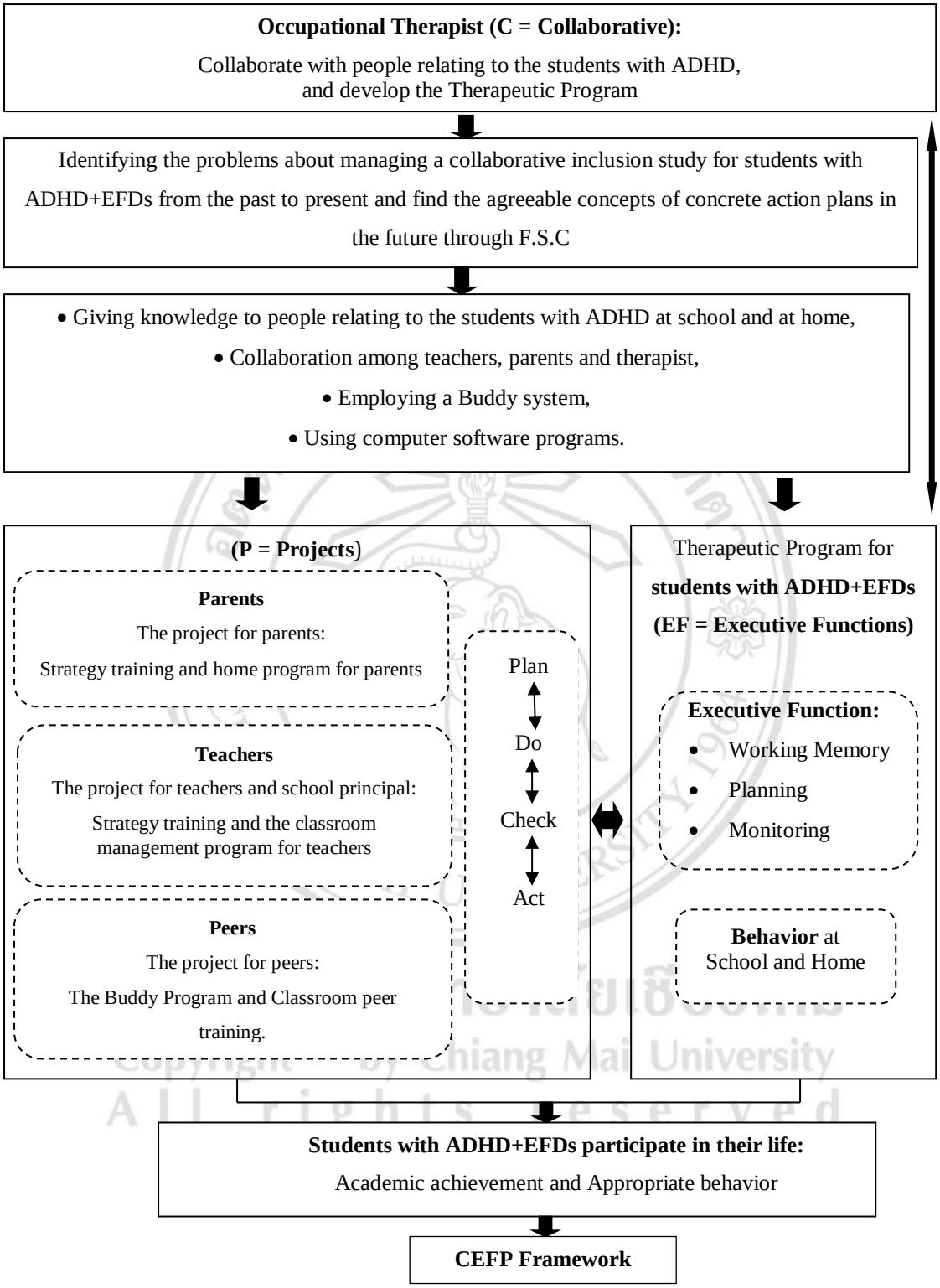

Figure 4.1: A Collaborative Inclusion Framework for Students with ADHD+EFDs in Upper Primary School

A collaborative inclusion Framework for students with ADHD+EFDs in upper primary school focused on the intervention procedures in the students with ADHD+EFDs and collaborated with their parents, teachers, and peers. The occupational therapist worked as a key person to design all of the intervention programs. These were based on the PEOP Model, which is one of many model of occupational therapy and focuses on students with ADHD+EFDs to participate in their life. The treatment package in this present study included a therapeutic program in executive functions for students with ADHD+EFDs; a project for parents, which included strategy training and a home program for parents; a project for teachers and the school principal, which was comprised of strategy training and a classroom management program for teachers; the project for peers which included a peer training program, as well as the Buddy Program and classroom peer training. Before starting all programs, the therapist collaborated with the students' parents and teachers to identify the problems about managing a collaborative inclusion study for students with ADHD+EFDs from the past to present and finding agreeable concepts and concrete action plans to implement for the future through the FSC method. Informational projects for parents, teachers, and peers were arranged. The resources used in these projects were based on the information gleaned from the FSC method.

The researcher developed a therapeutic program in executive functions for students with ADHD+EFDs and a program for their parents, teachers, and peers under the limited conditions of the resources of the research instruments, time, and the budget of the study.

The total duration of the therapeutic program in executive functions for students with ADHD+EFDs to enhance executive functions, specifically in working memory, planning and self-monitoring consisted of 21 sessions within 7 weeks. The students attended the program 3 times a week, and the program took one hour each time in the school setting. All of the evaluation and intervention process of the program were provided by the researcher/occupational therapist.

Parent training and a home program, the classroom management program, the peers training program, and the classroom peers training program started with giving knowledge about ADHD+EFDs and providing training for the parents, teachers, and the student peers to support the students with ADHD+EFDs at school and home. Between implementation for the students with ADHD+EFDs and their environment factors, the

therapist obtained feedback from parents via phone every week for 7 weeks (1 time/week). The therapist met the teachers every week for 7 weeks (1 time/week), and there was one classroom observation. For the peers, the therapist also met them every week for 7 weeks (1 time/week). The information from their feedback was important and was used to adjust or changed some details of the project with parents, teachers, and peers. The researcher used Plan-Do-Check-Act (PDCA) cycle (131) to encourage the research processes for the students with ADHD+EFDs and their environment factors; the parents, the teachers, the school principal and the peers. PDCA is a four steps circle for continuous improvement of a project. Plan is to set up the goal as a guideline for plotting the steps of the project. Do is to follow the set up plan. Check is to evaluate the practice to see whether it adheres to the plan and whether there are any obstacles, which may prevent the operation from achieving the target effectively. This step is done hand in hand with the project operation in order that the project is promptly improved by the most recent information derived. Act is to improve and to resolve problems found during the Check step for the most efficient operation and to prevent the same problems from reoccurring in the future. Overall, the research outcome in this study was to have students with ADHD + EFDs participate in their life, specifically in the aspects of academic achievement and appropriate behaviors (131).

All of the findings from this study, were summarized to build the collaborative inclusion Framework for students with ADHD+EFDs in upper primary school called the **"CEFP Framework."** The contents of this Framework are described below:

1. **C = Collaborative**: The researcher built collaborations among teachers, school principal, parents, and peers of students with ADHD+EFDs. The collaboration started with identification of the problems about a collaborative inclusion approach in the past, the present issues, and the creation of collaborative concepts of an action plans for students with ADHD+EFDs in the future by applying the Future Search Conference (FSC) technique. The researcher played an important role as an occupational therapist and coordinator in collaborating with all participants to facilitate the most appropriate intervention for students with ADHD+EFDs.

2. EF = Executive Functions: The researcher developed a therapeutic programs in executive functions for students with ADHD+EFDs. The programs included a computer software format and a paper and pencil format, which was based on the developmental frame of reference and extensive research related to working memory, planning, and self-monitoring intervention for students with ADHD+EFDs. Therapeutic programs in executive functions consisted of working memory activities; visuo-spatial working memory task, backwards digit- span, letter-span task, word list recall, planning activity; maze game, and monitoring activity; a self-monitoring checklist.

3. P = Projects: The researcher developed the projects for parents, teachers including the school principal, and peers, which based were based on the information gleaned from the FSC method. The projects reflected the needs of participants in this study:

- The project for parents, which included strategy training and a home program for parents.
- The project for teachers and the school principal, which included strategy training and a classroom management program for teachers.
- The project for peer, which included a peer training program; The Buddy Program and Classroom peer training.

The collaborative inclusion Framework for students with ADHD+EFDs in upper primary school, the CEFP Framework, led to the improvement of the students' GPA after the intervention. These results are presented in Table 10.

Table 4.4. Comparison of GPA of Students with ADHD+EFDs Before and After the Use of a Therapeutic Program Analyzed Statistically by Wilcoxon Signed-Ranks Test (N=8)

Variables	Before and After intervention	Mdn	Q.D.	The Wilcoxon signed ranks test	*p*-value	Effect Size Hedge's g
GPA	Pre	64.59	4.30	-2.38	.017*	0.60
	Post	66.50	4.60			

*p<.05

Table 4.4 illustrates the comparison of the GPA of students with ADHD+EFDs before and after the use of the therapeutic program. There were significant improvements after the intervention in the median scores of the ADHD+EFDs students' GPA with a large effect sizes at p <.05.

Parents' and teachers' level of satisfaction regarding the collaborative inclusion Framework for students with ADHD+EFDs in upper primary school (CEFP Framework)

The satisfaction of the collaborative inclusion framework for students with ADHD+EFDs in upper primary school (CEFP framework) was assessed through the questionnaire completed by the parents and the teachers; these questionnaires were self-administrated. Further data was collect via in-depth interview. The results showed that there was an overall positive level of satisfaction of the therapeutic program in executive function for students with ADHD+EFDs after interventions from both parents and teachers. The result of the parents' and the teachers' satisfaction in therapeutic program for students with ADHD+EFDs after intervention showed that the parents were "extremely satisfied" in all aspects which included the procedures, the service provider, as well as the facility and the quality of the program. The teachers were "extremely satisfied" in two aspects; namely, the service provider and the facility. The teachers also reported being "very satisfied" in the procedure and quality of the program. The results are presented in Table 4.5.

The scale in Table 4.5 is analyzed according to the theory of Best & Kahn (1993) (146)

The average	4.50–500	means	extremely satisfied
The average	3.50–4.49	means	very satisfied
The average	2.50–3.49	means	moderately satisfied
The average	1.50–2.49	means	slightly satisfied
The average	1.49 or below	means	extremely dissatisfied

Table 4.5. Mean and Levels of Satisfaction with the Therapeutic Program in Executive Functions for Students with ADHD+EFDs After Intervention from Parents and Teachers (N=14)

Aspects	Parents (N=8)			Teachers (N=6)		
	X	SD	Interpretation	X	SD	Interpretation
The procedure	4.69	0.29	extremely satisfied	4.38	0.28	very satisfied
Service provider	4.69	0.27	extremely satisfied	4.79	0.20	extremely satisfied
Facility	4.50	0.24	extremely satisfied	4.71	0.28	extremely satisfied
Quality	4.69	0.27	extremely satisfied	4.25	0.26	very satisfied

The findings regarding the levels of satisfaction of the students with ADHD+EFDs, the parents, and the teachers of CEFP Framework through in-depth interviews:

Students with ADHD+EFDs

From the students' perspective of satisfaction in CEFP Framework, there were two themes: (1) students with ADHD+EFDs were not as likely to forget to hand in their homework, and (2) Students with ADHD+EFDs had a greater attention span in the classroom. The contents of group discussion follow:

Theme 1: Students with ADHD+EFDs were not as likely to forget to hand in their homework

Students with ADHD+EFDs reported their opinions after all the program interventions were completed. Many students shared that they had seen improvement in handing in their homework; for example, one student said:

"I don't forget to hand in my homework in the classroom because my mom reminds me every night and in the morning."

Another student said:

"Now, I always hand in my homework in the classroom every morning and I don't forget it."

Theme 2: Students with ADHD+EFDs had greater attention span in the classroom

Most of the students with ADHD+EFDs reflected that they had greater attention span in the classroom. For example, one student said:

"I can focus and concentrate when the teacher is teaching because she moved me to the front of the class and my friends do not disturb me."

Another student said:

"I had a bettered attention span when the teacher is teaching in the classroom."

Parents

From the parents' perspective concerning their level of satisfaction in the CEFP framework, there were three major themes: (1) Children with ADHD+EFDs were more responsible in doing their homework, (2) Children with ADHD+EFDs could concentrate and persist in the tasks more than in the past, and (3) parents had more knowledge to support their son or daughter with ADHD+EFDs at home. The contents of the group discussion are listed below.

Theme 1: Children with ADHD+EFDs had more responsibility for their homework.

Parents expressed their opinion after completing all of this present study's programs. They gave important feedback about the improvement of their child in regards to being responsible for their homework; for example, one parents said:

"My child has more responsibility in doing his homework than before the research started. Now, he always does his homework after school."

Theme 2: Children with ADHD+EFDs could concentrate and continue on the tasks more than in the past.

Many of the parents reflected that their child could concentrate and persist in the tasks more than in the past. For example, one parents said:

"*He has more concentration and can do the tasks on his own until the task is completed."*

Theme 3: Parents had more knowledge to support the children with ADHD+EFDs at home.

All parents reflected an opinion about their knowledge after program. They reported that they had more information to support the children with ADHD+EFDs at home. For example, one parent said:

"I have more knowledge of my roles to support my child at home in ways that can lead to improvement in their academic performance in the school"

Teachers

From the teachers' perspective of satisfaction in CEFP framework, there were three themes: (1) students with ADHD+EFDs had more responsibility in their homework, (2) students with ADHD+EFDs completed the school tasks on time, and (3) teachers had more knowledge in ADHD and were better able to collaborate with others to support the students with ADHD+EFDs in the classroom. The content of the group discussion are described below.

Theme 1: Students with ADHD+EFDs had more responsibility in their homework

Teachers expressed their opinion after completing all the program. They gave feedback about the improvement of their students in the responsibility of homework; for example, one teachers said:

"He always handed in his homework every morning in the classroom"

Another teacher said:

"He had more responsibility for his homework, and he handed in his homework more than in the past."

Theme 2: Students with ADHD+EFDs completed the school tasks on time

Many of the teachers reflected that their students completed the school tasks on time. For example, one teachers said:

"He can complete the school tasks on time and hand in the tasks on time in the classroom."

Another teacher said:

"He can complete the worksheet on time and the classroom assignments on time in the classroom."

Theme 3: Teachers had more knowledge in ADHD and were better able to collaborate and support the students with ADHD+EFDs in the classroom

Teachers reflected an opinion about their knowledge after the program. They presented that they had more knowledge in ADHD and could support the students with ADHD+EFDs in the classroom though increased collaboration. For example, one teachers said the following:

"I have more knowledge in ADHD and also understand my role in collaboration with their parents and the occupational therapist."

Another teacher said:

"I have more understanding of my role to support the students with ADHD+EFDs in the classroom."

Peers (8 peers from The Buddy Program).

From the peers' perspective of satisfaction in CEFP framework, there were two themes: (1) students with ADHD+EFDs had more responsibility in their homework, and (2) students with ADHD+EFDs could concentrate in the tasks more than in the past. The content of the group discussion are described below.

Theme 1: Children with ADHD+EFDs had more responsibility for their homework.

Peers expressed their opinion after completing all of this present study's programs. They gave important feedback about the improvement of children with ADHD+EFDs in regards to being responsible for their homework; for example, one peers said:

"He always does his homework after school and handed in his homework every morning."

Theme 2: Students with ADHD+EFDs could concentrate in the tasks more than in the past

Many of the peers reflected that children with ADHD+EFDs could concentrate in the tasks more than in the past. For example, one peers said:

"He could concentrate in the tasks more than in the last year."