THE IMPACT OF THE 101S: A GUIDE TO POSITIVE DISCIPLINE PARENT TRAINING ON PARENT PRACTICES AND PRESCHOOLER'S EXECUTIVE FUNCTION

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THE IMPACT OF THE 101S: A GUIDE TO POSITIVE DISCIPLINE PARENT TRAINING ON PARENT PRACTICES AND PRESCHOOLER'S EXECUTIVE FUNCTION

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ABSTRACT

The aims of the study were to investigate the impact of The 101s Positive discipline parent training program, the nationally honored program in the US for enhancing a child's brain and social-emotional development through the usage of positive discipline, on Thai parenting skills, and on preschoolers' executive function (EF) skills. The sample was 27 parents and their 3-5-year-old preschoolers from the intervention group in which parents participated in the 101s training program as a part of the school's requirements, and 27 parents and their 3-5-year-old preschoolers from the control group. The parent rated his/her own parenting practices using The 101s Parent Interaction Checklist (PIC) and the preschoolers' EF skill level using the Behavior Rating Inventory of Executive Function–Preschool Version® (BRIEF-P). MANCOVA was performed to compare the significant differences in mean scores on parenting practices and EF skills between the sample and control groups.

The findings showed the significantly positive impact of the 101s parent training program on the parenting practices and preschoolers' EF skills. The implication, limitations, and suggestions are also discussed.

KEY WORDS: THE 101s: A GUIDE TO POSITIVE DISCIPLINE / POSITIVE PARENTING SKILLS / EXECUTIVE FUNCTION SKILLS / SOCIAL-EMOTIONAL SKILLS

92 pages

การศึกษาผลการอบรมผู้ปกครองเรื่อง 101s การสร้างวินัยเชิงบวกต่อทักษะการใช้วินัยเชิงบวกในการเลี้ยงดูเด็กของผู้ปกครอง และกระบวนการคิดขั้นสูงของสมองเด็กปฐมวัย

THE IMPACT OF THE 101S: A GUIDE TO POSITIVE DISCIPLINE PARENT TRAINING ON PARENT PRACTICES AND PRESCHOOLER'S EXECUTIVE FUNCTION

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บทคัดย่อ

การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษา ผลการอบรมผู้ปกครองเรื่อง 101s การสร้างวินัยเชิงบวก ซึ่งเป็นโปรแกรมที่ได้รับการยอมรับ และใช้ในประเทศสหรัฐอเมริกา เพื่อส่งเสริมพัฒนาการสมองของเด็ก และพัฒนาการด้านอารมณ์-สังคม ด้วยการใช้วินัยเชิงบวก ต่อทักษะการใช้วินัยเชิงบวกในการเลี้ยงดูเด็กของผู้ปกครอง และกระบวนการคิดขั้นสูง(Executive Function) ของเด็กปฐมวัย กลุ่มตัวอย่างเป็นผู้ปกครองนักเรียนระดับชั้นอนุบาล1-3 แบ่งเป็น 2 กลุ่มคือกลุ่มทดลองและกลุ่มควบคุม กลุ่มทดลองคือกลุ่มที่ผู้ปกครองได้รับการอบรม เรื่อง 101s การสร้างวินัยเชิงบวก โดยนำเทคนิคที่ได้รับการอบรมไปใช้ในการเลี้ยงดูลูกเป็นเวลาอย่างน้อย 8 เดือน กลุ่มควบคุมคือกลุ่มที่ผู้ปกครองไม่เคยได้รับการอบรมเรื่อง 101s การสร้างวินัยเชิงบวกมาก่อน การศึกษาครั้งนี้มีผู้ปกครองเข้าร่วมงานวิจัยทั้งสิ้น 54 คน แบ่งเป็นกลุ่มทดลอง จำนวน 27 คนและลูก กลุ่มควบคุมจำนวน27 คนและลูก การศึกษาครั้งนี้ใช้เครื่องมือได้แก่ The 101s Parent Interaction Practice เพื่อประเมินการใช้วินัยเชิงบวกและเชิงลบของผู้ปกครองในการเลี้ยงดูเด็ก และใช้ The Behavior Rating Inventory of Executive Function–Preschool Version® (BRIEF-P) เพื่อประเมินกระบวนการคิดขั้นสูงของสมองเด็กผ่านพฤติกรรม โดยใช้สถิติการวิเคราะห์ความแปรปรวนร่วมพหุคูณ(MANCOVA) เพื่อสำรวจความแตกต่างของค่าเฉลี่ยของคะแนนจากแบบสอบถาม PIC และ BRIEF-P เปรียบเทียบระหว่างกลุ่มทดลองและกลุ่มควบคุม

ผลจากการศึกษาพบว่าการอบรมผู้ปกครองเรื่อง 101s การสร้างวินัยเชิงบวกส่งผลต่อการเพิ่มทักษะการใช้วินัยเชิงบวกและลดการใช้วินัยเชิงลบในการเลี้ยงดูเด็กของผู้ปกครองอย่างมีนัยสำคัญทางสถิติ นอกจากนี้ยังส่งผลต่อการเพิ่มกระบวนการคิดขั้นสูงของสมองเด็กอย่างมีนัยสำคัญทางสถิติ ในส่วนท้ายของรายงานนี้จะนำเสนอการอภิปรายผลการวิจัย ข้อจำกัด ผลกระทบและข้อเสนอแนะสำหรับการวิจัยต่อไปในอนาคต

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CHAPTER I
INTRODUCTION

1.1 Background and Rationale of the research

In Thailand, the attention in early childhood development and education is increased. Concerning children development, the findings of the holistic development of Thai children surveyed in 2001 showed that only one-third of children at age 3 to 6 had appropriate-aged development (1). Moreover, the developmental trend tended to decline. The report from Thai Health showed that the percentage of the children who had appropriate-aged development was decreased from 72% in 2005 to 67% in 2008. The findings from Thai health report in 2011 also showed that approximately 25% of Thai students had lower intelligence quotient (IQ) than the normal range specified by WHO (90-110) (2). In addition, the survey of PISA also showed that Thai children have lower literacy skills, comparing to the students in other countries (3). Thus, the early childhood development and education programs are on the national agenda.

A substantial amount of research from neuroscience and psychology suggest that early childhood period is the critical or sensitive period. Tsujimoto (2008) suggested that the neuroanatomical structure of prefrontal cortex in human has a high rate of maturation during early childhood period, characterized by a reduction of synaptic and neurodensity, a growth of dendrites, and an increase in both gray and white matters. The prefrontal cortex structure rapidly develops in early childhood period and has the highest synaptic density value at age 3.5 years old (4). However, if it is not used, it will be pruned and decreased through the adolescence. Even though children's learning and academic outcomes require every aspect of development, social-emotional and cognitive development (5,6) is critical to promote skills necessary to adaptation, learning, social and emotional and early childhood period.

Social-emotional and cognitive development is the component of Executive Function (7); the brain process in the prefrontal cortex (8,9). Executive function (EF) is a higher order encompass cognitive process underlies goal-directed

activities (10) aiding in the monitoring and control through an action (11). EF is understood as an umbrella term of social-emotional and cognitive processes (9); including inhibition, working memory, emotional control, planning and organization, and shifting (8,10,11). These EF skills have influences on children's learning and academic outcomes (5,13,14,15).

Recently, an increasing number of research has showed that a child's nurturing experience is one of the main factors that affect the child's EF development. Margaret et al. (2008) conducted a research study on the relation between parental nurturance and memory development in children. The researchers found that the more nurture the children received, the better memory children acquired in both backward and forward selective analysis (16). The findings of the research conducted by Bernier et al. (2010) to investigate the quality of parent-infant interaction and child executive function, including working memory, impulse control, and set-shifting, also showed that the nurturing with autonomy-support was the strongest predictor of children's EF skills at each age. The findings of the previous research consistently suggested the significance of intervention programs for promoting children's EF skills at the early age(17).

Taken from the suggestions of previous research, there are relevant research studies on the impact of intervention programs on children's EF skills. Runyon et al. (2009) conducted a research study on the effective of Combined Parent-Child Cognitive-Behavioral Therapy (CPC-CBT) on parent who engaged in physical abusive behavior and traumatic child at aged 4 to14. The results showed the significant pre- to post treatment reductions in the use of physical punishment, the improvements in parental anger toward their children, and the decrease in children's posttraumatic stress symptoms and behavioral problems(18). Moreover Hiscock et al. (2008) conducted a research in the parenting program for improving children's behavior problems, and parenting and maternal mental health. The results showed that the improvement in parenting factors could predict children's behavioral problems, but not significantly reduce the externalizing-behavioral problems and maternal mental health(19).

Recently, a group of researchers led by Dr. Katharine C. Kersey, has studied the impact of the 101s Positive Discipline training programs (The 101s), the

program for providing children with positive discipline in a nurturing environment in order to promote caregivers' practices for helping children develop their children's brain and social-emotional development, and academic performance. The findings of the research showed the positive impact on teacher and parent practices and children's social-emotional and academic skills. Masterson (2008) found the efficacy of The 101s: A Guide to Positive Discipline to increased academic competencies and children's prosocial skills that including self-control, compliance, emotional regulation, attention, helping, asking, sharing, and cooperation (20). The results were confirmed by the research conducted by Panadda Thanasetkorn (2009) in Thailand. The results showed that the teachers in the 101s training group significantly had higher scores on positive interaction practices and lower scores on negative interaction practices, comparing to the scores of the teachers in the control group(21). The children's in the 101s teacher training group also significantly had higher scores on positive teacher-child relationships, school adjustment skills, and academic achievement, comparing to the scores of the children in the control group(21).

In addition to the 101s teacher training program, Piyavalee Thanasetkorn (2009) also conducted a research study on the impact og the 101s parent training on parent interaction practices, the quality of teacher-child relationship, and children social-emotional and academic development in Thailand. The findings also showed the effectiveness of the 101s parent training program on the parent interaction skills, the quality of the teacher-child relationship, children's school adjustment and children's academic achievement(22). Although the studies of Masterson (2008), Thanasetkorn (2009), and Thanasetkorn (2009) showed the positive impact of the 101s teacher and parent training on teacher and parent interaction practices, the quality of teacher-child relationships, and children's social – emotional and academic development, some limitations still remained. The researchers suggested that for further research, the protocol of the 101s teacher and parent training should be investigated in larger sample size in order to generalize the results of the research. In addition, the impact of the 101 training on the other aspects of child's development should be studied.

In 2011, the research studies on the impact of the 101s positive training programs on children's self-regulation and EF skills were continually conducted

(23,24). Pichitkusalachai (2011) investigated the impact of the 101s positive discipline teacher training on teacher practices and children's self-regulation in Thailand. The results showed that the teachers in the 101s training group had significantly higher scores on positive interaction practices and significantly lower scores on negative interaction practices, comparing to the teachers in the control group(23). The results also showed that the children in the 101s training group significantly had better mean scores on self-regulation skills, comparing to the children in the control group(23). Moreover, Suthipan et al. (2012) conducted a research study on the impact of the 101s positive discipline teacher training on teacher practices and children's EF skills with 7 kindergarten teachers and 60 four to six-year old students in Thailand. The results showed that *The 101s* teacher training had a positive impact on the teacher interaction practices and preschoolers' EF skills(24). In addition, *The 101s* training also resulted in a significant correlations between positive teacher interactions and preschoolers' EF skills(24).

The findings from the previous research studies showed the positive impact of the 101s positive teacher training on teacher interaction practices, children's self-regulation, and children's EF skills. However, the research studies on the impact of the 101s parent training and children's EF skills was still limited. Therefore, the current study aimed to examine the impact of the 101s parent training on parent interaction practices and children's EF skills in the preschool children in Thailand. 3 research questions were developed to address the objectives; including research questions 1, "Did the parents in the intervention group have significantly higher scores on positive parent interaction practice subscales and significantly lower scores on negative parent interaction practice subscales as measured by PIC?"**,** research question 2, "Did the children in the intervention group have significantly lower scores on Executive Function skills, comparing to the children in the control group, as measured by the BRIEF-P ?" and research questions 3, "Were there any correlations between parent interactions practices as measured by PIC and children' executive function skills as measured by the BRIEF-P?" The sample was 27 parents and their 3-5-year-old preschoolers in the intervention group in which the parents participated in the 101s training program as a part of the school requirement and 27 parents and their 3-5-year-old preschoolers in the control group. The parent sample rated his/her own parenting

practices using The 101s Parent Interaction Checklist (PIC) and the preschoolers' EF skills using the Behavior Rating Inventory of Executive Function–Preschool Version® (BRIEF-P). A series of MANCOVA was performed to compare the significant differences in mean scores on parenting practices and EF skills between the sample in the intervention and control groups.

1.2 Research Questions

1) Did the parents in the 101s Positive Discipline parent training group had significantly higher scores on positive parent interaction practices subscales, comparing to the parents in the control group as measured by parent interaction Checklist?

2) Did the students in The 101s Positive Discipline parent training group had significantly lower scores on Executive Function skills, comparing to the students in the control group as measured by the BRIEF-P?

3) Did the positive parent interaction practices had the correlation with children's executive function?

1.3 Objectives of the study

1) To investigate the impact of the 101s Positive Discipline parent training on parent interaction practices.

2) To investigate the impact of the 101s Positive Discipline parent training on children' Executive Function skills.

3) To examine the correlation between parent interaction practices and children' Executive Function skills.

1.4 Research Hypothesis

1.4.1. The hypotheses associated with the first question were:

H_0: There was no difference between the mean scores on parent positive interaction practices subscales in the101s Positive Discipline parent training group and the control group, as measured by parent interaction Checklist.

H_a: The parents in The 101s Positive Discipline parent training group had significantly higher scores on positive parent interaction practices subscales, comparing to the control group as measured by parent interaction Checklist.

1.4.2. The hypotheses associated with the second question were:

H_0: There was no difference between the mean scores on Executive Function subscales in The101s Positive Discipline parent training group and the control group, as measured by the BRIEF-P.

H_a: The students in the101s Positive Discipline parent training group had significantly lower mean scores on Executive Function subscales, comparing to the students in the control group, as measured by the BRIEF-P.

1.4.3. The hypotheses associated with the third question were:

H_0: There was not any correlation between parent interaction practices subscales and children's executive function subscales

H_a: There was some positive and negative correlation between parent interaction practice subscales and children's executive function subscales.

1.5 Expected benefits

It is expected that this research can enhance the following benefits:

1) To actually learn about the impact of the 101s positive discipline parent training on parent interaction practices and children' Executive Function skills for developing an intervention program in Thailand.

2) To equip parents with positive practices sensitive and responsive to children's social-emotional and academic development.

3) To promote children's EF skills.

4) To contribute the findings and suggestions from the research to research field in child development and education.

1.6 Scope of Study

According to the purposes of the current study, the 101s Positive Discipline parent training program, the parent interaction practice skills of the parents who had received the training in Tubtong school and the parents who had never received the training, as well as the K1 to K3 children's EF skills were the scope of the study.

1.7 Definitions

101s Positive Discipline is one hundred and one techniques developed for caregivers, parents, and teachers to stay connected to children while helping them become more self-directed and happier. These techniques are created by Dr. Katharine Kersey, Professor of Early Childhood Education, Darden College of Education at Old Dominion University in Norfolk, Virginia (22). In the current study, 15 principles are selected for serving the purposes of the research. 10 principles are categorized as the principles for behavioral management where as the other 5 principles are categorized as emotional support environment.

The Ten Principles of The 101s related to classroom behavioral management are:

1) Make a Big Deal Principle –" Make a big deal over responsible, considerate, appropriate behavior - with attention (your eyeballs), thanks, praise, thumbs-up, recognition, hugs, special privileges, incentives (NOT food)."

2) Ask the Child Principle – "Ask the child for input."Do you think this was a good choice?" "What were you trying to accomplish or tell us with your behavior?" "What do you think could help you in the future to remember to make a better choice?" "How would you like for things to be different?" "How about drawing

a picture of how you feel right now." Children have wonderful insight into their own behavior and great suggestions for ways to make things better."

3) Choice Principle – "Give the child two choices, both of which are positive and acceptable to you. "Would you rather tiptoe or hop upstairs to bed?" ("You choose or I'll choose.") This can be used with spouses. "The garage needs to be cleaned out. Would you rather do it tonight or Saturday?""

4) When/Then - Abuse it/Lose it Principle - "When you have finished your homework, then you may watch TV." (No homework - no TV.)

5) I Message Principle – "Own your own feelings. "When you leave wet towels on the bed, the bed gets wet, and I feel angry. I would like for you to hang them on the hook behind the door."

6) Timer Says it's Time Principle – "Set a timer to help children make transitions. "When the timer goes off, you will need to put away your books." "In five minutes, we will need to line up for lunch." It is also a good idea to give the child a chance to choose how long he needs to pull himself together. "It's okay to be upset, how long do you need?" Then allow him to remove himself from the group and set the timer. You may offer the child a choice (and set the timer) when it's necessary for him to do something he doesn't want to do. "Do you want to pick up your toys/let Susan have the wagon/take your bath -in one minute or two?"

7) Whisper Principle – "Instead of yelling, screaming or talking in a loud voice, surprise the child by lowering your voice to a whisper. This surprise often evokes immediate attention. It also helps you to stay in control and think more clearly."

8) Cueing Principle – "Give the child a cue such as a hand gesture to remind him - ahead of time - of the behavior you want him to exhibit. For example, teach the child that instead of interrupting when you are talking with somebody else, he is to squeeze your hand. This will let you know that he wants to talk to you (as you return the squeeze) and as soon as you can, you will stop the conversation and find out what he wants."

9) Divide and Conquer Principle – "Separate children who are reinforcing each other's misbehavior. Put adult between two children in a restaurant."

10) Empowerment Principle – "Develop child's competency, skills, mastery, and independence. Encourage him to solve his own problems. Let him know that his choices will determine his future."

The Five Principles of The 101s related to creating emotional support environment.

1) Belonging and Significance Principle – "Remember that everyone needs to feel that s/he belongs and is significant. Help your child to feel important by giving him important jobs to do and reminding him that if he doesn't do them, they don't get done! Help him/her feel important by being responsible."

2) Get on the Child's Eye Level Principle –" When talking with the child, get down on his/her eye level and look him in the eye while talking softly to him/her."

3) Validation Principle – "Acknowledge (validate) his wants and feelings. "I know you feel angry with your teacher and want to stay home from school. I don't blame you. The bus will be here in 45 minutes."

4) Change of Environment Principle –"If the child's misbehavior cannot be stopped, move to another room or location. (Go outside.)"

5) Encouragement Principle – "Give encouragement as often as possible. Help the child see the progress he has made. ("You got three spelling words correct. That is better than last week!" "Doesn't it feel good to be able to zip your own zipper, make your own bed, and clean up your own spills?")"

Executive function (EF) is higher order encompass cognitive process underlie goal-directed activity (10) that aid in the monitoring and control of thought and action (11). EF is multidimensional include Shifting, Working Memory, Inhibition, Emotional control, and Planning/Organization (7).

Shifting or attention switching is ability to shift between mental states, rule sets, or task (10). This skill need for inhibition and working memory process for shifting (10). The ability to shift improved with age and need for multiple cognitive processes, involves a network of activity in many PFC regions (10).

Working memory is ability to maintain and manipulate information over brief periods of time without reliance on external aid or cues (10). These skill improved with age (25) during preschool followed by more improvements through adolescence (10). The development of the working memory circuit involves in a localized pattern of activity within a frontoparietal network (10), has confirmed by neuroimaging study (26).

Inhibition is the ability to suppress dominant, automatic, or prepotent responses (12).These skill has rapid improvement in early childhood period on a variety of complex response inhibition tasks. The individual differences in inhibitory control were significantly correlated with children's ability to regulate their emotion (27). The impairment of inhibition control related to ADHD (Attention Deficit Hyperactivity Disorder)(28,29).

Emotional control is the ability to modulate his or her emotional responses. Examples of BRIEF-P items related to emotional control are "Becomes upset too easily" and "Mood changes frequently." (30).

Planning/Organization is the ability to create a plan, implement and monitoring the plan and finally reviewing the outcome. Items on the BRIEF-P related to planning/organization include such items as "completes tasks or actives too quickly" (30).

Preschooler means children at ages of 3-5 years

1.8 Conceptual framework

This research examined the impact of the 101s parent training on parent interaction practices and preschooler's Executive Functions (i.e., Inhibition, Shift, Emotional Control, Working Memory and Plan/Organize) in Thailand. Figure 1 shows the Conceptual frameworks.

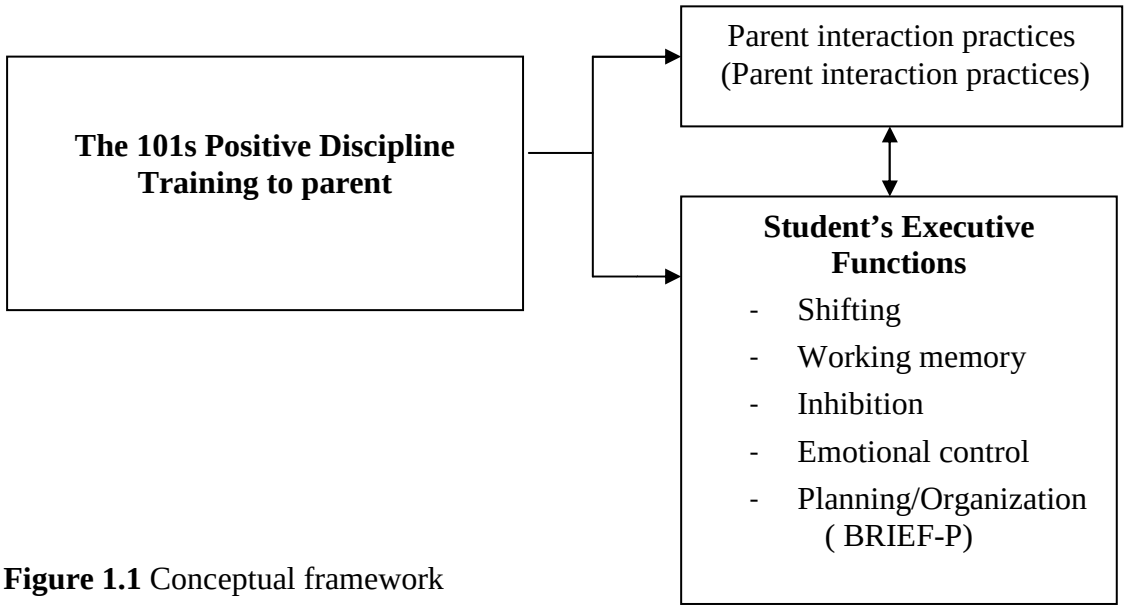

Figure 1.1 Conceptual framework

CHAPTER II
LITERATURE REVIEWS

The purposes of this study were to examine the impact of the 101s Positive Discipline parenting training on parent interaction practices and children' Executive Function skills. In this chapter, a substantial amount of research in multidisciplinary fields related to the studies of early childhood development, social-emotional skills, Executive Function, parent practices and intervention were reviewed. This chapter includes four major sections. In the first section, relevant research studies related to executive function; specifically, cognitive and social-emotional development in early childhood period were presented. In the second section, pertinent research studies on the impacts of social-emotional skills and executive function on children's behaviors were reviewed. In the third section, research studies on the main factors such the parent practices affecting children's social-emotional and executive function skills were reviewed. The last section, previous research in interventions for promoting child's social-emotional skills and executive function were synthesized.

2.1Executive Functions (EFs): Social-emotional and cognitive development in early childhood period

A substantial amount of research from neuroscience and psychology suggest that early years of life are critical or sensitive period for early childhood development. During this period, children's brain responses to the environment and forms the pattern of behaviors (31). The behaviors responded to the environment are the children's own experiences. The children learn from the prior experiences and develop the foundation skills significant for later years of life. Thereby, it is important to promote the children's necessary skills during the critical period; especially, social-emotional and cognitive development which is the component of the executive function skills. Otherwise, it would be difficult to stimulate further development in the

age to come (32). During this period, the children's brain and nervous system rapidly grows. Even though the area of prefrontal cortex is the latest area for maturation development, the foundation skills such the social-emotional and cognitive development, the component of the EF skills related to prefrontal cortex is critical to be promoted to the full potential during early childhood period (33).

During Early childhood period, many aspects of social and emotional competence are blooming. Children normally are able to understand emotions and conduct behaviors related to their own emotions in a challenging situation at age 3 and 4 years old (34,35). Dennis and co-worker (2009) conducted a research study to examine the reaction of preschoolers during angry, happy, and sad emotion with two challenging tasks: children waited for a gift while the mother was working, and children worked alone to retrieve a prize from a locked box with the wrong key. The results showed that the children had the broader rang of actions while being happy and angry than being sad(35). Interestingly, each children expressed different emotion during waiting. While the children were working alone in the locked box, they expressed angry emotion. Yet, while the children were waiting with mother, they expressed happy emotion(35). The findings suggested that it was a challenge in helping children to develop their emotional expressions while they were not with their mothers because it was the foundation of social-emotional adjustment. However, children in early childhood period favored relatively ineffective strategies such as venting and rumination for decreasing negative emotion (36) but children who were able to regulate their emotions showed effective strategies (36).

Previous research in social-emotional development also studied how the children acquired their social-emotional skills. The findings showed that preschoolers developed their ability to recognize emotion by leaning from each symbol around them (37). In the research of Nelson and Russell (2011), preschoolers were asked to label various emotions; including happiness, sadness, anger, and fear with four cue condition (i.e., Face-only, Body-only, Voice-only, and Multi-cue). The results showed that Face-only, Body-only, and Multi-cue (face, body, and voice) condition were more recognized than voice-only. The result also showed that the Multi-cue was the most recognized by the children (37).

Since preschool period is the time when the children have to separate from the family and learn to live in the school society. Children's social-emotional competences are the foundation skills for school adjustment, school readiness, and school success. Especially, children's abilities to interact and build positive relationships with peers is important. A research study conducted by Mathieson and Banerjee (2010) explained that peer relationships in preschool became more complex. The children had to learn and practice the ways to manage their arousal emotion while interacting with peers. As a result, several social-emotional skills were developed in this period; especially during play time(38).

Although the children in this period are able to understand and regulate their emotions and actions, each child was different (39), According to the research study conducted by Blandon et al. (2010) on social-emotional development in toddler, the results showed that externalizing behaviors and poor emotion regulation skills were significant related with social-emotion during transition to kindergarten(39). The findings suggested that several variables, for example, verbal ability, emotion understanding, mother-child mutuality were the factors of social-emotional development (40). The children's own social-emotional learning experiences would develop to ones' own social-emotional skills (5).

The research study conducted by Carson and Wang (2007) demonstrated the different learning experiences and individual social-emotional skills. Carson and Wang (2007) investigated the relationships between inhibitory control and emotion regulation with 53 four to six - year - old preschool children, using the Behavior Rating Inventory of Executive Function–Preschool Version® (BRIEF®-P) to examine the children's inhibitory control of responses and emotion regulation. The results showed that individual differences in inhibitory control were significantly correlated with children's ability to regulate their emotions. The findings suggested that attention, action, and emotion were significant skills developed during preschool period (11).

In summary, previous research had showed that emotion regulation was an important social-emotional skill developing during early childhood period (41). Not only could children's emotion regulation predict children's ability to control their emotion (11) but also could predict children's behavioral problems and their social-

emotional competence in school (13). The findings consistently suggested that emotion regulation should be promoted to the children in order to enhance children's ability to regulate their emotions and decrease their behavioral problems (41). However, it is important to note that the development of the children's social-emotion was related both neurobiology and psychology. Therefore, relevant research studies on social-emotional skills in the field of neuroscience were reviewed.

Regarding to the research in the field of neuroscience**,** social-emotional and cognitive competences were interrelated development as explained by the studies of brain development, brain regions, and brain functions. Brain development occurs in a womb and continuously changes during the first two years. The brain produces a numerous brain cells (neurons) and functions by communicating from neurons to neurons for functioning (synapses) (42). The synapse process becomes density in different brain areas across the life span. Yet, if it not used, it will be pruning and decreases during childhood and into adulthood (42). The density of synapses peaks at different time in the different regions of the brain and differently functions (32). There is research based evidence suggesting that prefrontal function is the most plastic and sensitive to environmental factor (42).

The prefrontal cortex (PFC) is the brain region involved in higher order cognitive function such as planning, reasoning, and language comprehension (4). These cognitive abilities associated with behaviors (9), indicating that the cognitive process developed rapidly in early childhood (43). According to Feldman and Eidelman (2009) research conducted to observe 126 children at six time-points from birth to 5 years old, the results showed that cognitive growth- spurt showed between 2 and 5 years old(44). The brain's architecture and a child's developing ability began from simple circuits and skills setting the foundation to the more advanced circuits and skills (10,45). The development of each step influences the next step (32). Understanding prefrontal cortex development in early childhood is importance for understanding the executive function development in early childhood (4). Tsujimoto (2004) summarized and suggested the neuroanatomical structure of prefrontal cortex in human has maturation during early childhood period, characterized by a reduction of synaptic and neurodensity, a growth of dendrites, and an increase in both gray and white matters. The prefrontal cortex structure developed rapidly in early childhood

period has the highest synaptic density value at age 3.5 years. It is important to note that the maturation of prefrontal structure during early childhood period (46) contributes to a developing capacity in cognitive control; the flexible regulation of thoughts and action (47).

Executive function is a precursor of cognitive function including inhibition, working memory and shifting (48,49,50). In the past decades, the research in executive function focused on adolescent or early adulthood (48,49,50). Recently, a substantial research focuses on early childhood period (11,51,52,53) because of the rapid development during the period (10). The findings from the previous research consistently suggested that children's EF skills develop through ages. For example, Carson and co-worker (2005) found that children at age 3 have improved performance significantly as a function of symbolic distancing which is the development of executive control over thoughts and action(54). Moreover Carson (2005) also examined 602 preschool children aged 2 to 6 years, using several executive function tasks. The results showed that the significant changes in EF processes were clearly related to age (11,54,55). Inhibitory control improved significantly between 3 to 4 year of age whereas switching skill improvement from 4 to 5 year of ages (55).

Similarly, Zelazo et al. (2003) tested the Cognitive Complexity and Control (CCC) theory for under stood the executive function development in 3-to 4-year-old children with 4 studies (9 experiments), each experiment contain with the Dimentional Change Card Sort (DCCS). The results indicated that the executive function development was significantly related to the children's age. The older children are more able to formulate and solve more complex problems, comparing to the younger children (56). Furthermore, a longitudinal research study conducted by Hughes and colleagues (2009), to examine the executive function including planning, inhibitory control, and working memory with 191 four and six-year-old children, using a EF task. The findings consistently suggested that EF development was also relied to the children's age. The children's performance on the test of planning, inhibitory control, and working memory at preschool year (ages 4 and 6) were significantly improved across the transition of school level (57). Furthermore, verbal ability and family income can point to base-line individual difference of EF development, and EF slope relate to verbal mental age (57)

In addition to the previous research using EF tasks to examine children's EF development, neuroimaging was used in the research studies on the brain regions and EF skills; including social-emotional and cognitive development. Previous research using neuroimaging demonstrated that cognitive process involved refinement connection between several brain regions; including left superior temporal gyrus, prefrontal region and parietal contribution to executive function (58), and also occured in the prefrontal cortex (46). The application of functional magnetic resonance imaging (fMRI) studies focusing on the PFC of normally developing preschool children were quite infeasible because it was required extensive constraint of head movement. Then, a new neuroimaging technique called near-infrared spectroscopy (NIRS) has adopted; using light transmission and absorption changes in hemoglobin concentration and oxygenation in the brain tissue (59).

Tsujimoto and others (2004) used the NIRS technique with the participants while performing a visuopatial item-recognition task to which related working memory. The PFC activity in normal adults and normally developing preschooler aged 5 and 6 years were compared (4). The result showed that working memory was related to the activity in the lateral PFC (4). Interestingly, the PFC activity during performance of the same task was the same in children at aged 5 years old and the adults (4). Findings from the research suggested that the lateral PFC in children as young as 4 years old with healthy development has already functioned. The researchers further explained that the neural systems of the lateral PFC related to working memory are gradually matured during age 4 to 7 years old. In contrary, the preschool children who were born preterm could possibly have the relation with the cerebral white matter (WM) abnormalities and the higher rates of executive disfunctions (60).

Recently, there has been increasing in the number of research showed the negative impact of brain development in neglected child, using CT scan. The findings from the previous research consistently showed the different size of cortex. A research conducted by Child Welfare Information Gateway with 3-year-old children found that the neglected children had significant smaller cortex than the healthy children (60). Similarly, research in stressed children also showed the cinsistent results (60). Frodl et al. (2010) conducted a research study on childhood stress and brain's structure

alteration in patients with major depression (MD), using magnetic resonance imaging (MRI). The results showed that the patients who had childhood emotional neglect had significantly smaller hippocampal white matter and prefrontal gray matter volume than sis the healthy patients in the control group (61). The results also showed that the physical neglect during childhood in healthy subject effected prefrontal gray matter volume. The findings critically suggested that stress during childhood period was significantly associated with brain development. A capacity for cognitive development was not dependent on only genes but it was also interdependent between genes and mother-child relationship (62).

Besides brain development and regions, the children' EF development could be explained by the brain structures. Paul MacLean' Triune Brain showed that human brain has 3 structures, including the reptilian brain in which the core brain stem functions, the paleomammalian brain where the limbic system is located, and the neomammalian brain where neocortex and neocerebellum are located. The reptilian brain is related to human instinct for surviving. The paleomammalian brain is related to emotions, learning, and memories. The neomammalian brain is related to logical thinking, decision making, and problem solving. The children aged 3 to 5 years had full development in paleomammalian brain and reptilian brain but still limited in neomammalian brain relating to neocortex. Therefore, it is necessary to help children develop and stimulate the skills relating to the 3 structures in the early age.

In summary, research in the field of neuroscience explained EF development; the umbrella term of social-emotional and cognitive processes in the brain. Previous research showed that EF development was related to age. Its processes and functions also occurred in the PFC and interrelated to the 3 brain structures. Pertinent research in the fields of both psychology and neuroscience consistently suggested that early childhood is the critical period for EF development. Early learning and experiences affected the EF skills and these skills in the early years are the foundation skills for later years of life. Next section, a substantial research in the link between EF skills, including social-emotional and cognitive skills and children's learning and behavioral development are reviewed.

2.2 The impact of social-emotional and cognitive skills on children's learning and behaviors

A substantial amount of research in early childhood development and early childhood education has provided important evidences of children's social-emotional development that underlines children's behaviors. The social- emotional competence is a process require several skill for promote emotion recognition and management for understand them self and others lead to positive social relationship (13). These skills are used to modify and integrate children's behaviors, action, and emotion through the cognitive process which is the social task to lead into socially and emotionally competent (9).

The research in social-emotional skill have been studied for a long time and each research focused on the different skills. However, the present research focused on self-regulation which is a "central and significant developmental hallmark of the early childhood period" (12). Self-regulation is a complex concept involved in the regulation of emotion, motivation, cognition (e.g. attention)**,** social interaction, and physical behavior (12)**.** Previous research showed strong evidences in studies on the impact of self-regulation on child's behavior and the significant child's self-regulation as a mediator of children's peer relationships and school success.

Regarding the impact of self-regulation on children's behaviors, previous research consistently indicated that emotional regulation was an important social-emotional skill developing associated with children's behavior problem in early childhood period (27,41). Hill (2006) conducted a longitudinal research to investigate the relationships among externalizing behavior problem, emotion regulation and inattention with children at age 2, 4 and 5 years old. The researchers found that poor emotion regulation and inattention were important predictors of the chronic-clinical profile for girls whereas socioeconomic status and inattention were important predictors of the chronic-clinical profile for boys. The findings suggested that the emotion regulation was an important task to which children should be promoted early in childhood period (41).

Moreover children's behavior effected to their social life (28,29), It's clear from the children with clinically significant symptom of conduct disorder and ADHD were significantly less prosocial than other children(28), these indicated that social-

emotional skill contributes to their social competence; it is related to peer relationship(16,29) and school-age problem(16). Trentacosta and Shaw (2009) conducted longitudinal study examine the relation among emotion self-regulation in early childhood, one of social-emotional skill, followed for peer rejection in the middle childhood and antisocial behavior in the early adolescence. They found the children less used of active distraction during a frustrating task in early childhood predict greater peer rejection in middle childhood and peer rejection in middle childhood predict antisocial behavior in early adolescence (29). The findings suggested that early prevention and intervention efforts to develop social-emotional skill to reduce risk for later social problems and delinquency were significant(29).

Previous research showed that deficit in social-emotional skills had negative impact on children's development in later lifen. In the longitudinal study, Bornstein et al. (2010) followed normative children at age 3 model; 4, 10 and 14 years for developmental among social competence and externalizing- and internalizing-behavioral adjustment. They found that children who had lower social competence at 4 years exhibited more internalizing and externalizing behaviors at 10 years old and more internalizing behavior at 14 years old (63). Moreover deficit social-emotional skills in early childhood linked to the borderline of personality disorder in the long-term outcomes (64), significantly associated with school-age symptoms and psychiatric disorders (16).

In addition, social-emotional skills in early childhood are important for academic achievement (5,6). Rhoades et al. (2011) conducted research to examine the mechanisms by which the social-emotional skill was associated with academic success. The children who were unable to pay attention or control themselves had difficulties in building positive relationships with peers and teachers (65). The results indicated that attention skill during kindergarten was significantly associated with academic success (13). The results were confirmed by the research of Denham et al. (2011). The researchers found that self – regulation skills are the roots of emotion knowledge that predict early school adjustment and academic success (66).

School adjustment and academic success require complexity of social-emotional and cognitive processes or executive function to regulate emotions, control thoughts and actions (51). Executive function determine the child's behavior lead to

their social-emotional and cognitive skills (8,67,68). According to research conducted by Ellis et al. (2009) to investigate relationships between executive function and aggressive behavior in children, the results showed that deficit in two executive function, including inhibition and planning were related to reactive aggression (69).

Another research conducted by Rhoades et al. (2009) to examine the relationships between inhibitory control and social-emotional competence showed consistent results. The results showed that the children who demonstrated better inhibitory control significantly had more scores on teacher rating of social skills and lower scores on the internalizing behaviors. The findings also indicated that other variables, including maternal education and employment status, children's sex, ethnicity, age, receptive vocabulary did not significantly have any impact on the children's social-emotional and behavioral development (13). The findings from the previous research suggested that EF skills should be trained in order to promote children's social-emotional competence and appropriate behaviors (9).

Regarding the relationships between executive function and academic achievement (5,6,14,15); including reading ability (15), mathematic, and literacy (14) across different culture (70).Nevertheless Pears et al. (2010), found interesting results in their research that the maltreated children performed more poorly in academic and social-emotional competence than did the healthy children. This finding suggested that care givers were the key factor affecting social-emotion and academic achievement (71). Next section, the research studies on the impact of parents' practices in children EF skills were reviewed.

2.3 The impact of the parents' practices on children's social-emotional and executive function skills

The dynamic of early development is shaped by biological and environmental initial conditions on the trajectories of cognitive and social-emotional development (31,43). It is increasingly believed that environmental experiences, especially parental nurturance have a direct impact on cognitive and social-emotional development in human (17,72). The parenting quality contributed to child's cognitive

performance and children's early cognitive performance related to later parenting quality, it was reciprocal influence (73). The parent-child interaction has direct and indirect impact to early social-cognitive development (74). Briggs-Gowan et al. (2008) conducted a research study to examine the relations between parental nurturance and memory development in children. The results showed that children with healthy nurturance had better memory ability in both backword and forword selective analysis, comparing to the children with lower healthy nurturance (16).

Consistently, the research conducted by Bernier et al. (2010) to examine the quality of parent-infant interaction and child executive function, including working memory, impulse control and set-shifting showed that the nurturing with autonomy-support was the strongest predictor of executive function at each age(34). Kochanska et al. (2009) found that although children had genetic risk, their capacities would be developed as well as the capacities of normal children if they had secure attachment with their caregivers.

Similarly, parent nurturance plays an important role in children's developing self-regulation capacity; the master key of executive function and social-emotional skills (12), reflecting children's performance on task of impulse control and compliance control (75). Children's self-regulations had significant correlations with their social competence, behavior problem, and early academic skills (75). Mother act as external regulator for children predict children's self-regulation skills. The mothers who overly controlled their children could make their children to have lower level of reactive control growth.

Moreover, parenting practices could also predict children's effortful control ability at 5.5 years (76). For example, according to the research conducted by Brigitte et.al to examine the associations among parenting practices and children's attitude toward the parenting practices and compliance. The results showed that the children rated spanking as the least fair disciplinary method. The findings indicated that spanking was the most effective for immediate compliance but not for long-term behavior change (77). The findings from another previous research also showed that negative discipline was statistically positively related to the child's aggression (17). The findings supported the quality of care and child psychological regulation.

Parenting practice is an important factor affecting children's executive function and social-emotional development.

In summary, parenting is important role in child's EF development. Intervention programs for promoting maternal sensitive responsiveness could promote higher cognitive and social competence in children (78). Next section, the research in intervention programs for promoting parenting practices and children's EF skills were reviewed.

2.4 Intervention programs for promoting healthy nurturance and children's executive function development

In the past decades, numerous research highlighted on developed preschool executive function in the school because it is important for academic achievement (79), but not much in the family context. Ade Diamond et al. (2007) conducted a research in the tools of the Mind (Tools) curriculum for improved executive function in preschooler including inhibitory control, working memory and cognitive flexibility, which is based on Vygotsky's insights into executive function. The results showed that the program had a positive impact on the children's EF skills (79). The children who trained their working memory in the program improved significantly on trained tasks and attention (80).

Moreover, Domitrovich et al. (2007) conducted a research in the Promoting Alternative Thinking Strategies curriculum (PATHS) for preschool-age children. Twenty classrooms participated in this study. The teachers in ten classrooms implemented weekly lessons across 9 months; and both parents and teachers reported the children's behaviors at the beginning and the end of the school year. The results showed that after exposuring to PATHS intervention, children had more scores on emotion knowledge skills, comparing to their pretest(81). Both teachers and parents also reported that their children had more social competence, comparing to their peers in the control group(81). Consistently, the research study of Ostrov et al. (2009) also found that a preventive intervention programs had impact on reducing physical and

relational aggression, peer victimization, and increasing prosocial behavior in early childhood classrooms(82).

In the part of parenting intervention often focus on maternal behavior and child's outcomes (83) which is indirect effect of executive function (51). Runyon et al. (2009) conducted a research study on the effect of Combined Parent-Child Cognitive-Behavioral Therapy (CPC-CBT) on parent who engaged in physical abusive behavior and traumatic child age 4-14. The result showed significant pre- to post treatment reductions in the use of physical punishment, improvements in parental anger toward their children and reduced in children's posttraumatic stress symptoms and behavioral problems (18). Moreover Hiscock et al. (2008) conducted a research study to examine the parenting program to improve children's behavior problems, parenting and maternal mental health. The result showed improvement in parenting factors that predict behavioral problems in children but did not reduce externalizing behavioral problems or affect maternal mental health at 2 years.

The 101s: A Guide to Positive Discipline training is a positive discipline techniques and cognitive-behavior intervention to responds emotional and social needs of children (21) to be an effective intervention for increasing Thai positive parenting skills (22) that to reduce using corporal punishment with children and to improve children's social and academic competencies in preschool both in United State (20) and Thailand (21). Recently, a group of researchers led by Dr. Katharine C. Kersey, has studied the impact of the 101s Positive Discipline training programs (The 101s), the program for providing children with positive discipline in a nurturing environment in order to promote children's brain and social-emotional development, on caregivers' practices and children's social-emotional skills and academic performance. The findings of the research showed the positive impact on teacher and parent practices and children's social-emotional and academic skills. Masterson (2008) found the efficacy of The 101s: A Guide to Positive Discipline to increased academic competencies and children's prosocial skills that including self-control, compliance, emotional regulation, attention, helping, asking, sharing, and cooperation. The results were confirmed by the research conducted by Panadda Thanasetkorn (2009) in Thailand. The results showed that the teachers in the 101s training group significantly had higher scores on positive interaction practices and lower scores on negative

interaction practices, comparing to the scores of the teachers in the control group. The children's in the 101s teacher training group also significantly had higher scores on positive teacher-child relationships, school adjustment skills, and academic achievement, comparing to the scores of the children in the control group.

In addition to the 101s teacher training program, Piyavalee Thanasetkorn (2009) also conducted a research study on the impact on the 101s parent training on parent interaction practices, the quality of teacher-child relationship, and children social-emotional and academic development in Thailand. The findings also showed the effectiveness of the 101s parent training program on the parent interaction skills, the quality of the teacher-child relationship, children's school adjustment and children's academic achievement. Although the studies of Masterson (2008), Thanasetkorn (2009), and Thanasetkorn (2009) showed the positive impact of the 101s teacher and parent training on teacher and parent interaction practices, the quality of teacher-child relationships, and children's social – emotional and academic development, some limitations still remained. The researchers suggested that for further research, the protocol of the 101s teacher and parent training should be investigated in larger sample size in order to generalize the results of the research. In addition, the impact of the 101 training on the other aspects of child's development should be studied.

In 2011, the research studies on the impact of the 101s positive training programs on children's self-regulation and EF skills were continually conducted (28,29). Pichitkusalachai (2011) investigated the impact of the 101s positive discipline teacher training on teacher practices and children's self-regulation in Thailand. The results showed that the teachers in the 101s training group had significantly higher scores on positive interaction practices and significantly lower scores on negative interaction practices, comparing to the teachers in the control group. The results also showed that the children in the 101s training group significantly had better mean scores on self-regulation skills, comparing to the children in the control group. Moreover, Suthipan et al. (2012) conducted a research study on the impact of the 101s positive discipline teacher training on teacher practices and children's EF skills with 7 kindergarten teachers and 60 four to six-year old students in Thailand. The results showed that *The 101s* teacher training had a positive impact on the teacher interaction

practices and preschoolers' EF skills. In addition, *The 101s* training also resulted in a significant correlations between positive teacher interactions and preschoolers' EF skills.

The findings from the previous research studies showed the positive impact of the 101s positive teacher training on teacher interaction practices, children's self-regulation, and children's EF skills. However, the research studies on the impact of the 101s parent training and children's EF skills was still limited. Therefore, the current study aimed to examine the impact of the 101s parent training on parent interaction practices and children's EF skills in the preschool children in Thailand. 3 research questions were developed to address the objectives; including research questions 1, "Did the parents in the intervention group have significantly higher scores on positive parent interaction practice subscales and significantly lower scores on negative parent interaction practice subscales as measured by PIC?"**,** research question 2, "Did the children in the intervention group have significantly lower scores on Executive Function skills, comparing to the children in the control group, as measured by the BRIEF-P ?" and research questions 3, "Were there any correlations between parent interactions practices as measured by PIC and children' executive function skills as measured by the BRIEF-P?" Next chapter, the research methods and procedures are presented.

CHAPTER III
METHODOLOGY

3.1 Introduction

This chapter described the methodology of this research. Through this chapter, research questions and hypotheses, the population, variables, measurement instruments, data collection procedures, and data analysis are presented.

3.2 Research Questions and Hypotheses

The research questions for this study were:

1) Did the parents in the 101s Positive Discipline parent training group had significantly higher scores on positive parent interaction practices subscales, comparing to the parents in the control group as measured by parent interaction Checklist?

2) Did the students in The 101s Positive Discipline parent training group had significantly lower scores on Executive Function skills, comparing to the students in the control group as measured by the BRIEF-P?

3) Did the positive parent interaction practices had the correlation with children's executive function?

The hypotheses associated with the first question were:

H_0: There was no difference between the mean scores on parent positive interaction practices subscales in the101s Positive Discipline parent training group and the control group, as measured by parent interaction Checklist.

H_a: The parents in The 101s Positive Discipline parent training group had significantly higher scores on positive parent interaction practices subscales, comparing to the control group as measured by parent interaction Checklist.

3.2.3 The hypotheses associated with the second question were:

H_0: There was no difference between the mean scores on Executive Function subscales in The101s Positive Discipline parent training group and the control group, as measured by the BRIEF-P .

H_a: The students in the101s Positive Discipline parent training group had significantly lower mean scores on Executive Function subscales, comparing to the students in the control group, as measured by the BRIEF-P .

H_0: There was no correlation between positive parent interaction practices and children's executive function

H_a: There were some significant correlation between positive parent interaction practices and children's executive function

3.3 Populations and Sample Group

3.3.1 Subject selection and allocation

The setting of the population in the present study was a school where the parents had been continuously participating in The101s Positive Discipline training for more than 7 months. Therefore, the target population was the parents and their children in the school holding the 101s Positive Discipline training. In order to compare the significant differences in the scores on the parent interaction practices and the children's executive functions, the target population also included the parents and their children who had never trained The101s Positive Discipline and attended any school matching to the training school.

Thus, the populations of the current study were kindergarten parents and their children at ages of 3-5 studying in Kindergarten for the educational year 2011 in Tubtong school, Thailand.

Since the present research studied the impact of the training program that was already exist in Tubtong school and the parents had been trained The101s Positive Discipline, ex-post- facto posttest only research design was utilized for ethical reason.. Although the ex-post- facto research design has many advantages but it also contains some problems:

1. Subject are not randomly assigned to treatments, then there would be inherent confounds in population.

2. When comparing the significant difference between two groups, covariate variables that could affect the results could occur due to the sampling problem.

3. Dropout in follow subject forward.

4. Detection bias.

In order to control the threat to the internal and external research,, the researcher applied:

1. Matching method for recruiting the subject in the two groups (e.g. private school, size, economic status of parent).

2. Statistical control for eliminate confound variables.

3.3.2 Inclusion criteria

1) Parent who had children study in the kindergarten 1 to 3 in March 2012 at Tubtong school, and children had normal development.

2) Parent who had been continuously participating in The101s Positive Discipline training for more than 7 months on parent interaction practices and students' Executive Function skills.

- Parent's Ages
- Parents education
- Family's income
- Agree to participate to this study.

3.3.3 Exclusion criteria

- Out of normal distribution.
- Disagree to participate to this study and consent form signed by their parent.

3.3.4 Termination criteria

To be a part of the study was end when the participants refused to participate or withdrawn from the study whether it is for any reason.

3.3.5 Sample size calculation

The sample was selected purposively (Purposive sample) was the parent of the student studying in a Tubtong school , kindergarten 1 to 3 in March 2012 and trained The101s Positive Discipline training for more than 7 months total 30 people. The number expected to withdrawn from the study about 20% of those.

$n = \{(Z_{\alpha/2} + Z_{\beta}) \sigma_d / \Delta\}^2$

n = Sample size

$Z_{\alpha/2}$ = Z-value when set the confidence equal to 95% (α=0.05) (=1.96)

Z_{β} = Z-value when set the power testing equal to 80% (β=0.2) (=0.842)

σ_d = Standard deviation of mean difference

Δ = The mean difference

σ_d = 0.39451- 0.32139

= 0.07

Δ = 0.2850 - 0.1273

= 0.16

$n = \{(1.96 + 0.842) 0.072/0.16\}^2$

$= (2.8/0.45)^2$

$= (6.22)^2$

= 38.69

n = 39

drop out 20% then n = 39 + (39 x 0.2)

= 46.8

~ 47 people in one group

The number of sample size was 47 people in one group but the total number of parents who trained The 101s Positive Discipline was 30 parents, then this research studied 30 parents in the intervention group and 30 parents in the control group.

3.3.6 The operation if the participant withdrawn from the research

1) The participants could refuse to participate or withdrawn at any time for any reason although the participants to some. The researcher would not had to perform any and would not been affected when withdrawn from the study.

2) Withdrawal of participants not affected the result because the researcher had determined. The sample size was large enough for the termination.

3.4 Independent variables and dependent variables

Independent Variable was the 101s parent training in this study.

Dependent Variables were parent practices and executive function.

Confounding Variables was gender, status, extracurricular activity and educational background of parents and teachers.

3.5 Interventions

The 101s training school. The parents in The 101s training schools were asked to participate in 1 half-day session of the 101s positive discipline parent training. The manual of The 101s: A Guide to Positive Discipline Training Manual was distributed to parents in the training schools. The training focused on the significance of positive adult-child relationships to children’s EF development. Then, the fifteen techniques of The 101s positive discipline related to creating emotional support environment were introduced to the participants in the training groups, including Belonging and Significant Principle, Get on the Child's Eye Level Principle, Validation Principle, Change of Environment Principle, and Encouragement Principle. The others positive principles of The 101s related to behavioral management, including Make a Big Deal Principle, Ask the Child Principle, Choice Principle, When/Then Abuse it/Lose it Principle, I Message Principle, Timer Says It's Time Principle, Whisper Principle, Cueing Principle, Divide and Conquer Principle and Empowerment Principle were also introduced. The trained parents were asked to record the techniques they used with their children, the results from using the101s techniques each day on the record form. The trained parents had to participate in the

weekly meeting for sharing their experience and discussing their understanding of the 101s positive discipline techniques. The following up sessions focused on group discussion concerning the feedback, comment, and questions about the use of the 101s positive discipline techniques.

Control school. The parents received no training during collecting data. The parents in the control group would use their regular school curriculum and services. However, after collecting data, the parents in the control group received The 101s training.

3.6 Instruments

In this research, questionnaires and 2 standardized instruments will be used:

3.6.1 Questionnaires.

3.6.1.1 The general information questionnaires of parents have developed to control confounding variables such as gender, status, extracurricular activity and level of education. There are 20 questions 2 parts different.

Part1: The story about family of subjects. There are 6 questions

Part2 : The general information of subjects. There are 14 questions such as gender, age, health, daily activity.

3.6.2 Standardized Instruments

3.6.2.1 The 101s Parent Interaction Checklist (PIC) (22)**.**

It is designed for rating how a parent interacts to their children. The instrument was adapted from The 101s Teacher Interaction Checklist and developed by Thanasetkorn,2008. The PIC is a culture free (22) consist of different 2 parts: Positive discipline practice and negative discipline practice (22). “Items 1 to 10 are written in a 4-point Likert-type scale. Answers range from"Not at all true" (1) to "Very much true" (4). Conversely, items 11 to 20 are written in a 4-point Likert-type scale with answers ranging from "Not at all true" (4) to "Very much true" (1)” (22).

3.6.2.2 The Behavior Rating Inventory of Executive Function–Preschool Version® (BRIEF®-P) (7).

It is a standardize rating scale form used by parent, teacher and day care providers to rate a child's executive function. It is designed to measure the rang of behavioral manifestations of executive function in preschool age children (age 2 to 5 years) within the context of his/her every day environment- home and school. The BRIEF-P consists of a single Rating Form with 63 items, that measure element of various executive function: Inhibit, Shift, Emotion control, Working memory, and Plan/Organize. Moreover BRIEF-P also have high internal consistency reliability (.80-.95 for parent sample and .90-.97 for teacher sample); test-retest reliability (.78-.90 for parents and .64-.94 for teachers); and modest correlations between parent and teacher ratings (.14-.28) (7) . The first, the Inhibitory Self-Control Index (ISCI) is composed of the Inhibit and Emotional Control scales. The second, the Flexibility Index (FI) is composed of the Shift and Emotional Control scales, reflects behavioral rigidity and emotional modulation. Finally, Emergent Metacognition Index (EMI) is composed of the Working Memory and Plan/Organize scales and reflects developing metacognition. There also are two Validity scales: Negativity and Inconsistency. Furthermore, BRIEF-P can use to assessing and monitoring difficulty child (e.g. ADHD) by comparing obtained scores with T-score norms of each aspect of executive functioning competence.

3.7 Data collection

The following explains the procedures for collecting data

1) The informed letters send to the director of Tubtong school and Tummapiruk school for asked to permission to collected data.

2) The researcher carried the document and explained the participants by the respondent. The document include three edition, first generalize questionnaires , second The 101s Parent Interaction Checklist (22) and the last BRIEF-P: Behavior rating inventory of executive function preschool version. Given to preschool teacher and both sample group and control group for distribute to 27 parents in their class.

When the participant answered the questionnaires, the parents gathered at the kindergarten teacher.

3) The researcher analyzed the data from the questionnaires, used MANCOVA to studied the impact of training The 101s Positive Discipline on parent practice and children's executive function.

4) The researcher analyzed the results of questionnaires The 101s Parent Interaction Checklist (22) and BRIEF-P to evaluated the relationship.

5) The results and discussion was written in approximately in April 2012, respectively. Write the results and discussion.

3.8 Data analysis

The statistic computer programs used to analyze the obtained data on the following process:

1) The descriptive statistic for the sample background characteristics used to explain general data of subjects. Then, descriptive statistics (means and standard deviations) for the total score from each subscale of the 101s Parent Interaction Checklist presented separately for each group.

2) The inferential method of data analysis, multivariate analysis of covariance (MANCOVA) was utilized to evaluate the mean differences on dependent variables (Parent Practices and BRIEF®-P score) between the target school and control school. The reason was the dependent variables had subscale and these research had covariate variable, then MANCOVA was used to eliminate multi-variables.

3) Bivariat correlation was used for evaluate the relationship between parent practice and executive function.

CHAPTER IV
RESULT

In this chapter, the results underlining the research questions are presented in 4 sections. First section describes two dimensions of participants' background, including family background and children' background using descriptive statistic (see Appendix Questionnaires). Second section shows the results of the analysis focusing on the research questions 1, "Did the parents in the intervention group have significantly higher scores on positive parent interaction practice subscales and significantly lower scores on negative parent interaction practice subscales as measured by PIC?" The results of the analysis, using a series of multivariate analysis of covariance (MANCOVA) tests were presented the mean differences on each subscale of the PIC between the intervention group and control group. Next, third section shows the results of the analysis focusing on the research question 2, "Did the children in the intervention group have significantly lower scores on Executive Function skills, comparing to the children in the control group, as measured by the BRIEF-P ?" The results of the analysis, using a series of multivariate analysis of covariance (MANCOVA) tests that address the mean difference on each subscale of BRIEF-P between the children in the 101s Positive Discipline training and control groups. Fourth section shows the result of the analysis focusing on the research questions 3, "Were there any correlations between parent interactions practices as measured by PIC and children' executive function skills as measured by the BRIEF-P?" The results of the analysis, using a bivariate correlation analysis showed the relation between parent practices and children executive function. Finally, the chapter ends with the summary of the results of the analysis addressing all the significant results of the research questions.

4.1 Results of descriptive statistic analysis for the demographic data and background of the participants.

For this section, descriptive statistic analysis was utilized to explain the two dimensions of family background in the 101s Positive Discipline training group and control group.

4.1.1 parent background

In this dimension, relationship with the child, the person who has been raising the child, parent's level of education, parent's career, and family income were computed (See Table 4.1). For relationship with the child, the results showed that most of the parent in the intervention group who answered the questionnaires, BRIEF-P, and PIC were mother (77.8%). Likewise, most parents in the control group were mothers (88.9%). The result also showed that only few parents both in the intervention group (22.2%) and control group (11.1%) were fathers who answered the questionnaires, BRIEF-P and PIC.

For Family income, the results showed that most of the parents both in the intervention group (88.9%) and control group (77.8%) had family income up to 50,000 baht per month. For parents' level of education, most of fathers in the intervention group had bachelor degree (48.1%) and master degree (48.1%). Likewise, most fathers in the control group had bachelor degree (55.6%). The result also showed that most of the mothers' level of education in both intervention group (70.4%) and control group (55.6%) were bachelor degree.

For parents' career, most of the fathers in the intervention group were officers (48.1%) whereas most of the fathers in the control group were business owners (48.1%). Likewise, most of the mothers in the intervention group were officers (37.0%) whereas most of the mothers in the control group were business owners (44.4%). However, the result also showed that some of mother in both intervention group (33.3%) and control group (14.8%) were housewifves.

In summary, according to the results of the descriptive statistics, the family background of the intervention and control groups were simiilar; including the person who answered the questionnaires, BRIEF-P, and PIC, family income, and the parents' level of education. However, the careers of the parents in the intervention and control

groups were quite different. Therefore, the parents' career factor was used to compute the MANCOVA as a covariate to control confounding variable that could affect the results of the analysis

Table 4.1 Results of descriptive statistic analysis for the parent background (n=54)

Characteristics	School Number (%)		Total Number (%) n=54
	Intervention school n=27	Control school n=27	
Gender			
- Male	6 (22.2)	3 (11.11)	9 (16.67)
- Female	21(77.8)	24 (88.9)	45(83.33)
- Total	27(50.0)	27(50.0)	54(100.0)
Family income (bath per month)			
- 10,001-20,000	0 (0)	3 (11.1)	3 (5.55)
- 20,001-30,000	0 (0)	2 (7.4)	2 (3.70)
- 30,001-40,000	0 (0)	0 (0)	0 (0)
- 40,001-50,000	3 (11.1)	1 (3.7)	4 (7.4)
- > 50,000	24 (88.9)	21(77.8)	45 (83.33)
- Total	27(50.0)	27(50.0)	54(100.0)
Father's level of education			
lower high school	0(0)	0(0)	0(0)
- High school	0(0)	2(7.4)	2(3.70)
- Diploma	0(0)	2(7.4)	15(27.78)
- Bachelor degree	13(48.1)	15(55.6)	19(35.18)
- Master degree	13(48.1)	6(22.2)	14(25.92)
- Ph.D	1(3.7)	1(3.7)	2(3.70)
- Other	0(0)	1(3.7)	1(1.85)
- Total	27(50.0)	27(50.0)	54(100)

Table 4.1 Results of descriptive statistic analysis for the parent background (n=54) (cont.)

Characteristics	School Number (%)		Total Number (%) n=54
	Intervention school n=27	Control school n=27	
Mother's level of education			
lower high school	0(0)	0(0)	0(0)
- High school	0(0)	4(14.8)	4(7.4)
- Diploma	0(0)	0(0)	0(0)
- Bachelor degree	19(70.4)	15(55.6)	34(62.96)
- Master degree	7(25.9)	7(25.9)	14(25.92)
- Ph.D	0(0)	1(3.7)	1(1.85)
- Other	1(3.7)	0(0)	1(1.85)
- Total	27(50.0)	27(50.0)	54(100.0)
Father's career			
- Owner business	4(14.8)	13(48.1)	17(31.48)
- Officer	13(48.1)	3(11.1)	16(29.63)
- Architect	3(11.1)	0(0)	3(5.55)
- Teacher	1(3.7)	3(11.1)	4(7.4)
- Pharmacist	1(3.7)	0(0)	1(1.85)
- Accountant	0(0)	1(3.7)	1(1.85)
- Engineer	2(7.4)	2(7.4)	4(7.4)
- Labor	0(0)	3(11.1)	3(5.55)
- Governmental officer/ State Enterprise officer	1(3.7)	1(3.7)	2(3.7)
- Other	2(7.4)	1(3.7)	3(5.55)
- Total	27(50)	27(50.0)	54(100.0)

Table 4.1 Results of descriptive statistic analysis for the parent background (n=54) (cont.)

Characteristics	School Number (%)		Total Number (%) n=54
	Intervention school n=27	Control school n=27	
Mother's career			
- Owner business	3(11.1)	12(44.4)	15(27.78)
- Officer	10(37.0)	4(14.8)	14(25.92)
- Housewife	9(33.3)	4(14.8)	13(24.07)
- Doctor/Nurse	0(0)	3(11.1)	3(5.55)
- Teacher	1(3.7)	2(7.4)	3(5.55)
- Accountant	2(7.4)	0(0)	2(3.7)
- Pharmacist	1(3.7)	0(0)	1(1.85)
- Labor	0(0)	1(3.7)	1(1.85)
- Governmental officer/ State Enterprise officer	1(3.7)	1(3.7)	2(3.7)
- Other	0(0)	0(0)	0(0)
- Total	27(50.0)	27(50.0)	54(100.0)

4.1.2 Children background

In this dimension, gender, age, health status, underlying disease, disability, seizure, the period of time for sleeping, and sleeping problems were computed (See Table 4.2). The total child participants were 54 children enrolling in 2 kindergarten schools. For gender, the results showed that most of the children in the intervention group were boy (59.3%), and most of the children in the control group were boy (77.8%). For age, the results showed that most of the children in the intervention group (29.6%) had age average between 3.7 to 3.11 years. While most of the children in the control group (44.4%) had age average more than 5 years. For children' health status, the results showed that most of the children in the intervention group were healthy (74.1%), and most of the children in the control group were healthy (70.4%). For disability, seizure and sleeping problems, the results also showed that most of the children in both intervention group and control group did not have any disability (100%, 96.3%, respective;y), seizure (96.3%, 88.9, respectively) and sleeping problem

(96.3%, 88.9%, respectively). Moreover, all of children had no evidence of psychiatric or neurological disorders.

Table 4.2 Results of descriptive statistic analysis for the children background (n=54)

General Characteristics	school Number (%)		Total Number (%)
	Intervention school n=27	Control school N=27	n=54
Gender			
- Boy	16(59.3)	21(77.8)	37(68.51)
- Girl	11(40.7)	6(22.2)	17(31.48)
Age ($\bar{x}$=3.85 , SD= 1.66)			
- Lower 3.0 years	4(14.8)	0(0)	4(7.4)
- 3.0-3.6 years	4(14.8)	6(22.2)	10(18.5)
- 3.7-3.11 years	8(29.6)	2(7.4)	10(18.5)
- 4.0-4.6 years	5(18.5)	5(18.5)	10(18.5)
- 4.7-4.11 years	4(14.8)	2(7.4)	6(11.11)
- 5.00- 5.11 years	2(7.4)	12(44.4)	14(25.9)

Table 4.2 Results of descriptive statistic analysis for the children background (n=54) (cont.)

General Characteristics	school Number (%)		Total Number (%)
	Intervention school n=27	Control school N=27	n=54
Children's health status			
- Very healthy	3(11.1)	3(11.1)	6(11.11)
- Healthy	20(74.1)	19(70.4)	39(72.22)
- Poor healthy	4(14.8)	5(18.5)	9(17.67)
Disability			
- No	27(100)	26(96.3)	53(98.15)
- Yes	0(0)	1(3.7)	1(1.85)
Zeizure			
- **No**	26(96.3)	24(88.9)	50(92.59)
- **Yes**	1(3.7)	3(11.1)	4(7.4)
Sleeping problem			
- **No**	26(96.3)	24(88.9)	50(92.59)
- **Yes**	1(3.7)	3(11.1)	4(7.4)

It is important to note that some background variables could not be computed because the data could not be collected. Therefore, these variables (i.e., extra activity after school and activity at home) could not be explained the sample as well as to perform in MANCOVA as covariates.

4.2 The Impact of *The 101s* Parent Training on Parent interaction practices

Research Question 1: ”Did the parents in the training group have significantly higher scores on positive parent interaction practices subscales and significantly lower scores on negative parent interaction practices subscales, as measured by PIC? To investigate the mean differences between training group and control group, a series of MANCOVA was performed. The data variables were screened to underline the assumptions of MANCOVA for normality, homoscedasticity, and correlation among dependent variables. The normal distributions of variables were analyzed using the explore procedure at an alpha level of .01. The results of descriptive statistic showed that most variables were located within the -1 to 1 rage of skewness and kurtosis. The homogeneity of variance of variance-covariance matrices was analyzed using Box’s M Test. The significant level of the Box’s M Test was not significant at an alpha level of .001 (p>.001); therefore, the variance-covariance matrix of Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were not different. The Shapiro – Wilk statistic was also utilized to test the normality for small sample size. The significance levels of Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were greater than .01(p.>.01); therefore, the normality was assumed.

After screening the data variables, a series of MANCOVA was performed to evaluate the significance between mean differences for two groups of independent variables (i.e., intervention group, and control group) on the subscale of PIC (i.e., Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment). Pillai’s Trace statistic was reported since it was considered to have acceptable power and to be the most robust statistic against violations of assumption. The table 4.3 presents the multivariate test of PIC.

Table 4.3 Multivariate Test of PIC subscales

Effect of Pillai's Test	F	Hypothesis Degree of Freedom(df)	P-Value
Family's income	2.002	1	0.097
Father's education	0.385	1	0.856
Mother's education	1.830	1	0.126
School	59.274	1	0.000*

*p<0.05

The multivariate tests for the family income, father's level of education, mother's level of education were not significant (F=2.002, 0.385, 1.830, p. > .05, respectively). It indicated that those covariate variables did not have any main effect on a statistically significant difference between the mean scores on Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment, and Physical punishment for intervention group and control group. However, for Group (i.e., intervention group, and control group), the multivariate test was significant (F= 59.27,P.<.05). It indicates that Group variable had a main effect on a statistically significant difference between the mean scores on one or more than one of the PIC subscales (i.e., Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment for intervention group and control group).

The univariate followed-up F-test were performed to examine the effect of independent variables (i.e., family income, father's level of education, mother's level of education and school) on each individual dependent variable (i.e., Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment).

Table 4.4 The Univariate F-Test Table of PIC subscales

Source	Dependent variable	Degree of Freedom(df)	F	P-Value
Family income	Emotion support	1	0.256	0.615
	Behavior adjustment	1	0.113	0.738
	Critical/harsh	1	4.124	0.048

Table 4.4 The Univariate F-Test Table of PIC subscales (cont.)

Source	Dependent variable	Degree of Freedom(df)	F	P-Value
	Verbal punishment	1	9.134	0.004
	Physical punishment	1	2.009	0.163
Father's level of education	Emotion support	1	0.573	0.453
	Behavior adjustment	1	1.512	0.225
	Critical/harsh	1	0.056	0.814
	Verbal punishment	1	0.608	0.439
	Physical punishment	1	0.093	0.761
Mother's level of education	Emotion support	1	0.253	0.617
	Behavior adjustment	1	6.842	0.012
	Critical/harsh	1	0.002	0.965
	Verbal punishment	1	0.375	0.543
	Physical punishment	1	0.215	0.645
School	Emotion support	1	34.436	0.000
	Behavior adjustment	1	176.333	0.000
	Critical/harsh	1	50.717	0.000
	Verbal punishment	1	167.572	0.000
	Physical punishment	1	72.977	0.000

For family income, the univariate F-test for Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were not significant (F = 0.256, 0.113, 4.124, 9.134, 2.009, p>.05, respectively). It indicates that Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were not significantly influenced by family income

For father's level of education, the univariate F-test for Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were not significant (F =0.573, 1.512, 0.056, 0.608, 0.093 , p>.05, respectively). It indicates

that Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were not significantly influenced by father's level of education.

For mother's level of education, the univariate F-test for Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were not significant (F =0.253, 6.842, 0.002, 0.375, 0.215, p>.05). It indicates that Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were not significantly influenced by mother's level of education.

For Group, the univariate F-test for Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were significant (F =34.436, 176.333, 50.717, 167.572, 72.977, p>.05). It indicates that Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment were significantly influenced by School.

The descriptive statistic of PIC subscales showed in Table 4.5 that the parents in the intervention group had significantly higher scores on positive parent interaction practices subscales; including Emotion support (M = 3.9630, Sd=0.11401), Behavior adjustment (M =3.9256 , Sd = 0.13340), comparing to the mean scores on positive parent interaction practices subscales; including Emotion support (M = 3.3674, Sd=0.48145), Behavior adjustment (M =2.8770 , Sd = 0.40440) of the parents in the control group. In addition, the descriptive statistic of PIC subscales also showed that the parents in the intervention group had significantly lower scores on negative parent interaction practices subscales; including Critical/harsh (M =1.1796 ,sd =0.19558), Verbal punishment (M =1.5678 ,Sd = 0.50547), and Physical punishment M =1.0741 ,Sd =0.26688), comparing to the mean scores on negative parent interaction practices subscales; including Critical/harsh (M =2.0193 ,sd = 0.61217), Verbal punishment (M = 3.4515,Sd = 0.67555), and Physical punishment M = 2.4815,sd = 0.80240) of the parents in the control group,

Table 4.5 Descriptive Statistics of PIC Subscales

	Intervention group(N=27)		Control group(N=27)	
	Mean	Std. Deviation	Mean	Std. Deviation
Emotion support	3.9630	0.11401	3.3674	0.48145
Behavior adjustment	3.9256	0.13340	2.8770	0.40440
Critical/harsh	1.1796	0.19558	2.0193	0.61217
Verbal punishment	1.5678	0.50547	3.4515	0.67555
Physical punishment	1.0741	0.26688	2.4815	0.80240

4.3 The Impact of *The 101s* Parent Training on the executive function skills of the children

Research Question 2: "Did the children in the training group have significantly lower scores on Executive Function skills subscales as measured by the BRIEF-P? To investigate the group differences between training group and control group, a MANCOVA was performed. The data variables were screened to underline the assumptions of MANCOVA for normality, homoscedasticity, and correlation among dependent variables. The normal distributions of variables were analyzed using the explore procedure at an alpha level of .01. The results of descriptive statistic showed that most variables were located within the -1 to 1 rage of skewness and kurtosis. The homogeneity of variance of variance-covariance matrices was analyzed using Box's M Test. The significant level of the Box's M Test was not significant at an alpha level of .001 ($p>.001$); therefore, the variance-covariance matrix of inhibit, shift, emotional control, working memory and plan/organize were not different. The Shapiro – Wilk statistic was also utilized to test the normality for small sample size. The significance levels of inhibit, shift, emotional control, working memory and plan/organize were greater than .01($p.>.01$); therefore, the normality was assumed.

After screening the data variables, a series of MANCOVA was performed to evaluate the significances between mean differences for two groups of independent variables (i.e., intervention group, and control group) on the subscale of BRIEF-P (i.e., inhibit, shift, emotional control, working memory and plan/organize). Pillai's Trace statistic was reported since it was considered to have acceptable power and to be the most robust statistic against violations of assumption. The table 4.6 shows the multivariate test of BRIEF-P.

Table 4.6 Multivariate Test Table of BRIEF-P subscales

Effect of Pillai's Test	F	Hypothesis Degree of Freedom(df)	P-Value
Family's income	0.528	1	0.754
Children's gender	0.951	1	0.456
School	6.459	1	0.000

*p<0.05

The multivariate tests for the family income and children's gender were not significant (F=0.528, 0.951,p.>.05). It indicated that those covariate variables did not have any main effect on a statistically significant difference between the mean scores on inhibit, shift, emotional control, working memory and plan/organize for intervention group and control group. However, for School (i.e., intervention group, and control group), the multivariate test was significant (F=6.459,P.<.05). It indicateed that School variable had a main effect on a statistically significant difference between the mean scores on one or more than one of the BRIEF-P subscales (i.e., inhibit, shift, emotional control, working memory and plan/organize for intervention group and control group).

The univariate followed-up F-test were performed to examine the effect of the independent variables (i.e., family income, children's gender and school) on each individual dependent variable (i.e., inhibit, shift, emotional control, working memory and plan/organize for intervention group and control group). Table 4.7 shows the univariate followed –up F- test for BRIEF-P.

Table 4.7 The Univariate F-Test Table of BRIEF-P subscales

Source	Dependent variable	Degree of Freedom(df)	F	P-Value
Family income	Inhibition control	1	0.048	0.827
	Shift	1	0.583	0.448
	Emotion control	1	0.518	0.475
	Working memory	1	0.272	0.604
	Plan/Organize	1	0.134	0.716
Children's gender	Inhibition control	1	0.630	0.431
	Shift	1	1.196	0.278
	Emotion control	1	3.309	0.074
	Working memory	1	1.190	0.280
	Plan/Organize	1	1.518	0.223
School	Inhibition control	1	22.269	0.000*
	Shift	1	7.195	0.009*
	Emotion control	1	7.909	0.007*
	Working memory	1	23.961	0.000*
	Plan/Organize	1	29.670	0.000*

*p<0.05

For family income, the univariate F-test for inhibit, shift, emotional control, working memory and plan/organize for intervention group and control group were not significant (F =0.048, 0.583, 0.518, 0.272, 0.134, respective;y, p>.05). It indicated that inhibit, shift, emotional control, working memory and plan/organize were not significant influenced by family income

For children's gender, the univariate F-test for inhibit, shift, emotional control, working memory and plan/organize were not significant (F =0.630, 1.196, 3.309, 1.190, 1.518, respectively p>.05). It indicated that inhibit, shift, emotional control, working memory and plan/organize were not significant influenced by children's gender.

For School, the univariate F-test for inhibit, shift, emotional control, working memory and plan/organize were significant (F =22.269, 7.195, 7.909, 23.961, 29.670, p>.05). It indicated that inhibit, shift, emotional control, working memory and plan/organize were significant influenced by School.

The descriptive statistic of BRIEF-P subscales showed in Table 4.8. The children in the intervention group had significantly lower mean scores on executive function subscales; including inhibit (M =47.05, Sd = 7.203), Shif(M=45.71, SD= 9.247), Emotion control(M=42.95,SD=10.434), Working memory(M=46.68,SD=10.148), Plan/Organize (M=40.03,SD=8.663), comparing to the mean scores of the children in control group, including inhibit (M =58.44, Sd=10.635) Shif(M=51.74, SD=6.870), Emotion control(M=53.22,SD=16.109),Working memory(M=63.33,SD=13.978), Plan/Organize (M=54.37,SD=10.789). It is important to note that the higher mean scores on the subscales in the BRIEF-P showed the more signs of EF disorder.

Table 4.8 Descriptive Statistics of BRIEF-P Subscales

	Intervention group(N=27)		Control group(N=27)	
	Mean	Std. Deviation	Mean	Std. Deviation
Inhibition control	47.05	7.203	58.44	10.635
Shift	45.71	9.247	51.74	6.870
Emotion control	42.95	10.434	53.22	16.109
Working memory	46.68	10.148	63.33	13.978
Plan/Organize	40.03	8.663	54.37	10.789

4.4 The relationship between *The 101s* Parent -Interaction Checklist Subscales and BRIEF-P subscales.

Research question 3: "Did *The 101s* parent training result in a positive correlation between the parents' use of positive discipline as measured by *The 101s* Parent Interaction Checklist and children's executive function skills as measured by the BRIEF-P? A bivariate correlation was undertaken among the PIC subscales and BRIEF-P subscales. It was hypothesized that parents practice and children' executive function results in relationships between the five subscales of the PIC and the five subscales of BRIEF-P. Table 4.9 showed the results of the correlation among *The 101s* Parent-Interaction Checklist Subscales and BRIEF-P Subscales on the parent ratings.

Table 4.9 Results of the Correlation between *The 101s* Parent-Interaction Checklist Subscales and BRIEF-P Subscales on the parent ratings.

		Emotion support	Behavior adjustment	Critical/harsh	Verbal punishment	Physical punishment
Inhibition control	r	-0.462	-0.647	0.745	0.705	0.711
	p	0.000	0.000	0.000	0.000	0.000
Shift	r	-0.503	-0.575	0.577	0.715	0.597
	p	0.000	0.000	0.000	0.000	0.000
Emotion control	r	-0.471	-0.570	0.714	0.555	0.526
	p	0.000	0.000	0.000	0.000	0.000
Working memory	r	-0.442	-0.616	0.680	0.739	0.695
	p	0.001	0.000	0.000	0.000	0.000
Plan/Organize	r	-0.481	-0.612	0.744	0.766	0.666
	p	0.000	0.000	0.000	0.000	0.000

For Inhibition control and Emotion support, the results of the correlation showed a significantly negative relationship between Inhibition control and Emotion support ($r= -0.462$, $p<0.01$), indicating that lower scores on Inhibition control were negatively associated with higher scores on Parent's Emotion support. For Inhibition control and Behavior adjustment, the result of the correlation showed a significant negative relationship between Inhibition control and Behavior adjustment ($r=-0.647$, $p<0.01$), indicating that lower scores on Inhibition control score were negatively

associated with higher scores on Behavior adjustment. For Inhibition control and Critical/harsh, the result of the correlation showed a significant positive relationship between Inhibition control and Critical/harsh ($r=0.745$, $p<0.01$), indicating that higher Inhibition control score were positively associated with higher Critical/harsh scores. For Inhibition control and Verbal punishment, the result of the correlation showed a significant positive relationship between Inhibition control and Verbal punishment ($r=0.705$, $p<0.01$), indicating that higher Inhibition control score were positively associated with higher Verbal punishment scores. For Inhibition control and Physical punishment, the result of the correlation showed a significant positive relationship between Inhibition control and Physical punishment ($r=0.711$, $p<0.01$), indicating that higher Inhibition control score were positively associated with higher Physical punishment.

For Shift and Emotion support, the result of the correlation showed a significant negative relationship between Shift and Emotion support ($r=-0.503$, $p<0.01$), indicating that lower Shift score were negatively associated with higher Emotion support scores. For Shift and Behavior adjustment, the result of the correlation showed a significant negative relationship between Shift and Behavior adjustment ($r=-0.575$, $p<0.01$), indicating that lower Shift score were negatively associated with higher Behavior adjustment scores. For Shift and Critical/harsh, the result of the correlation showed a significant positive relationship between Shift and Critical/harsh ($r=0.577$, $p<0.01$), indicating that higher Shift score were positively associated with higher Critical/harsh scores. For Shift and Verbal punishment, the result of the correlation showed a significant positive relationship between Shift and Verbal punishment ($r=0.715$, $p<0.01$), indicating that higher Shift score were positively associated with higher Verbal punishment scores. For Shift and Physical punishment, the result of the correlation showed a significant positive relationship between Shift and Physical punishment ($r=0.597$, $p<0.01$), indicating that higher Shift score were positively associated with higher Physical punishment.

For Emotion control and Emotion support, the result of the correlation showed a significant negative relationship between Emotion control and Emotion support ($r=-0.471$, $p<0.01$), indicating that lower Emotion control score were negatively associated with higher Emotion support scores. For Emotion control and

Behavior adjustment, the result of the correlation showed a significant negative relationship between Emotion control and Behavior adjustment ($r=-0.570$, $p<0.01$), indicating that lower Emotion control score were negatively associated with higher Behavior adjustment scores. For Emotion control and Critical/harsh, the result of the correlation showed a significant positive relationship between Emotion control and Critical/harsh ($r=0.714$, $p<0.01$), indicating that higher Emotion control score were positively associated with higher Critical/harsh scores. For Emotion control and Verbal punishment, the result of the correlation showed a significant positive relationship between Emotion control and Verbal punishment ($r=0.555$, $p<0.01$), indicating that higher Emotion control score were positively associated with higher Verbal punishment scores. For Emotion control and Physical punishment, the result of the correlation showed a significant positive relationship between Emotion control and Physical punishment ($r=0.526$, $p<0.01$), indicating that higher Emotion control score were positively associated with higher Physical punishment.

For Working memory and Emotion support, the result of the correlation showed a significant negative relationship between Working memory and Emotion support ($r=-0.442$, $p<0.01$), indicating that lower Working memory score were negatively associated with higher Emotion support scores. For Working memory and Behavior adjustment, the result of the correlation showed a significantly negative relationship between Working memory and Behavior adjustment ($r=-0.616$, $p<0.01$), indicating that lower Working memory score were negatively associated with higher Behavior adjustment scores. For Working memory and Critical/harsh, the result of the correlation showed a significant positive relationship between Working memory and Critical/harsh ($r=0.680$, $p<0.01$), indicating that higher Working memory score were positively associated with higher Critical/harsh scores. For Working memory and Verbal punishment, the result of the correlation showed a significant positive relationship between Working memory and Verbal punishment ($r=0.379$, $p<0.01$), indicating that higher Working memory score were positively associated with higher Verbal punishment scores. For Working memory and Physical punishment, the result of the correlation showed a significant positive relationship between Working memory and Physical punishment ($r=0.695$, $p<0.01$), indicating that higher Working memory score were positively associated with higher Physical punishment.

For Plan/Organize and Emotion support, the result of the correlation showed a significant negative relationship between Plan/Organize and Emotion support ($r=-0.481$, $p<0.01$), indicating that lower Plan/Organize score were negatively associated with higher Emotion support scores. For Plan/Organize and Behavior adjustment, the result of the correlation showed a significant negative relationship between Plan/Organize and Behavior adjustment ($r=-0.612$, $p<0.01$), indicating that lower Plan/Organize score were negatively associated with higher Behavior adjustment scores. For Plan/Organize and Critical/harsh, the result of the correlation showed a significant positive relationship between Plan/Organize and Critical/harsh ($r=0.744$, $p<0.01$), indicating that higher Plan/Organize score were positively associated with higher Critical/harsh scores. For Plan/Organize and Verbal punishment, the result of the correlation showed a significant positive relationship between Plan/Organize and Verbal punishment ($r=0.766$, $p<0.01$), indicating that higher Plan/Organize score were positively associated with higher Verbal punishment scores. For Plan/Organize and Physical punishment, the result of the correlation showed a significant positive relationship between Plan/Organize and Physical punishment ($r=0.666$, $p<0.01$), indicating that higher Plan/Organize score were positively associated with higher Physical punishment.

Summary

Overall, the 101s Positive Discipline training program had a major effect on parents' practices and children' executive functions. Figure 4.1 presents the comparisons of parents' interaction practices subscale, as measured by the PIC, between the intervention group and control group. For the PIC subscale scores of the parents in the intervention group, who received the 101s Positive Discipline training program, had significantly higher mean scores on Emotion support and Behavior adjustment, and has significantly lower mean scores on Critical/harsh, Verbal punishment, Verbal punishment, comparing to the mean scores on the PIC of the parents in the control group.

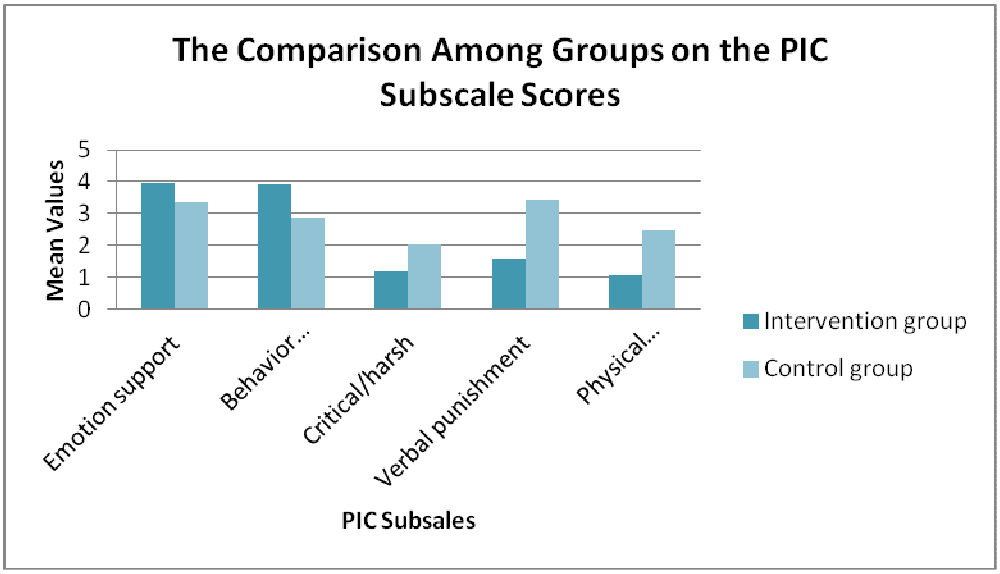

Figure 4.1 The comparison among Groups on the PIC Subscale Scores

For children' executive function, Figure 4.2 presents the comparisons of the children' executive function subscale, as measured by BRIEF-P, between intervention group and control group. For BRIEF-P subscale scores of the children in the intervention group, whose parent received the 101s Positive Discipline training program, had significantly lower mean scores on all subscales of EF; including Inhibition control, Shift, Emotion control, Working memory, and Plan/Organize, comparing to the children in the control group.

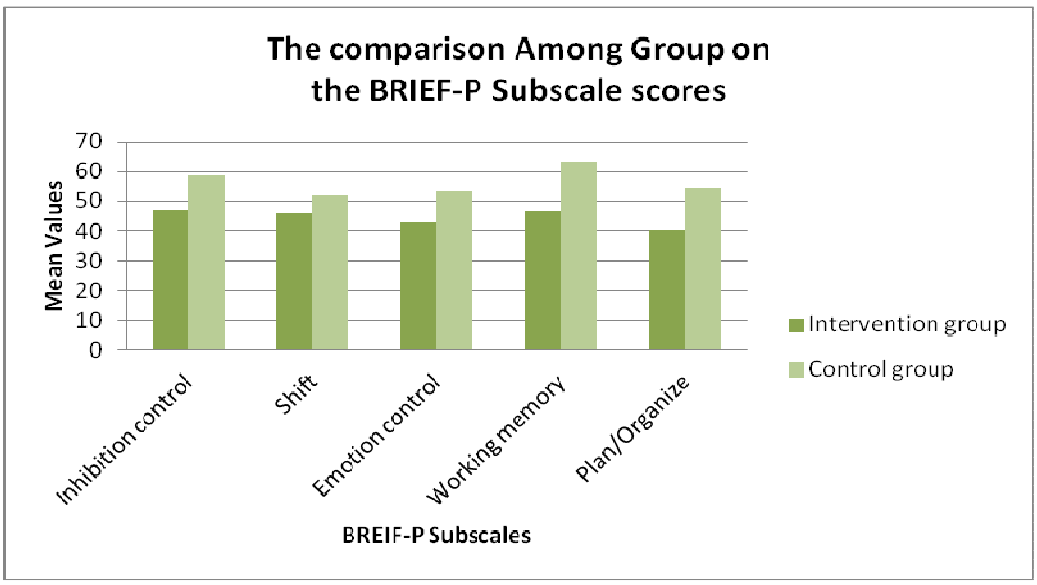

Figure 4.2 The comparison among Groups on the BRIEF-P Subscale Scores

Additionally, The 101s Parent-Interaction Checklist Subscales and BRIEF-P Subscales resulted in significantly positive correlation between Inhibition control and the negative subscale of the PIC, including Critical/harsh, Verbal punishment, and Physical punishment. The results also showed the significantly positive correlation in, the including Shift and Critical/harsh, Verbal punishment, Physical punishment, Emotion control and Critical/harsh. There were also the significantly correlation amoug in the Verbal Physical punishment, Working memory and Critical/harsh, Verbal punishment, Physical punishment, Plan/Organize and Critical/harsh, Verbal punishment, Physical punishment. In , The 101s Parent-Interaction Checklist Subscales and BRIEF-P Subscales resulted in negative correlation between Inhibition control and Emotion support, Behavior adjustment, Shift and Emotion support, Behavior adjustment, Emotion control and Emotion support, Behavior adjustment, Working memory and Emotion support, Behavior adjustment, Plan/Organize and Emotion support, Behavior adjustment. In next chapter, a summary of certain findings and discussions for specific findings are provided.

CHAPTER V
DISCUSSION

This study was conducted to investigate the impact of *The 101s* Positive Discipline Parent Training on the parent interaction practices and children' executive function skills, using a series of multivariate of covariance analyses (MANCOVA), *The 101s* Positive Discipline is a training program to improve parents' practices, were expected to predict the higher scores on positive parent interaction practices subscales (Emotion support, Behavior adjustment) and lower scores on negative parent interaction practices subscales (Critical/harsh, Verbal punishment, Verbal punishment) as measured by the Parent Interaction Checklist (PIC), and expected to predict lower scores on children' Executive Function skills as measured by the Behavior Rating Inventory of Executive Function–Preschool Version®(BRIEF-P). The other purposed of the study was to examine the relationships among parent practices, and children's executive function, using a bivariate correlation analysis. It was hypothesized that there were statistically significant correlations among the PIC and BRIEF subscales.

The sample of this study consisted of 27parents in the intervention group who had participated in the 101s training for at least 8 months and 27 parents in the control group and their 3 to 5-year-old preschoolers. The children did not have disability, seizure, and problem about sleeping. The children had normal eyesight, hearing, and development (i.e., movement, balance, learning and behavior).

Overall, the results of this study showed that the parents in the intervention group significantly had higher mean scores on positive parenting practices and lower mean scores on negative discipline, comparing to the parents in the control group. Likewise, the preschoolers in the intervention group significantly had better mean scores on EF skills, comparing to the preschoolers in the control group. In addition, there were significantly positive and negative correlations among the subscales of the PCU and BRIEF-P. These findings support the major effects of the 101s Positive Discipline training program on parenting practices and preschoolers' EF skills.

This chapter provides a summary of certain findings and explanations for specific findings. Then potential implications and pertinent research-based evidence for this study in which the findings might be applied is presented in 3 sections. First section describes the impact of the 101s Positive Discipline training program on parent interactions practices. Second section describes the impact of The 101s Positive Discipline training program on children's Executive Function skills. The last section describes the relationships among parent practices and children's executive function skills. The limitations and suggestions for future research are discussed at the end of this chapter.

5.1 The Impact of *The 101s* Parent Training on Parent Interaction Practices.

Finding from this research, the results indicated that *The 101s* parent training group significantly had higher mean scores on positive parenting practices and lower mean scores on negative discipline, comparing to the parents in the control group. The result confirmed the hypothesis that the parents in the intervention group had significant higher scores on positive parent interaction practices subscales and significant lower scores on negative parent interaction practices subscales as measured by the Parent Interaction Checklist (PIC). Moreover, the results also showed that the confound variables (i.e., family income, father's level of education, mother's level of education) did not significantly effect on parent interaction practices as measure by the PIC. While Group (i.e., intervention group, and control group), the multivariate test was significant ($F= 59.27, P.<.05$). It indicated that Group variable had a main effect on a statistically significant difference between the mean score on one or more than one of the PIC subscales (i.e., Emotion support, Behavior adjustment, Critical/harsh, Verbal punishment and Physical punishment for intervention group and control group).

The finding of the current research is consistent with the previous research on parent interaction training program conducted by Runyon et al. (2009) and Hiscock et al. (2008). Runyon et al. (2009) conducted study the effective of Combined Parent-Child Cognitive-Behavioral Therapy (CPC-CBT) on parent who engaged in physical

abusive behavior and traumatic child age 4 to 14. The result showed significant pre- to post treatment reductions in the use of physical punishment, improvements in parental anger toward their children and reduced in children's posttraumatic stress symptoms and behavioral problems. In other research conducted by Hiscock et al. (2008), conducted examine the parenting program to improved children's behavior problems, parenting and maternal mental health. The result showed the improvement in parenting factors that predict behavioral problems in children but did not reduce externalizing behavioral problems or affect maternal mental health at 2 years. While the current research conducted study the effective of The 101s parent training on parents practice, the results showed that the parents in the intervention group had significantly higher mean scores on positive parent interaction practices subscales and significantly lower mean scores on negative parent interaction practices subscales as measured by Parent Interaction Checklist (PIC). It could be concluded that the change of parental practices resulted from the training program had an effect on the reduction of children stress (Runyon et al. 2009) and the increasing of positive parent practices had the major effect on children's behavior improvement (Runyon et al. (2009) Hiscock et al. (2008) .

Moreover, these results of the current research were also paralleled to the previous findings conducted by Thanasetkorn (2009) with 164 parents, 164 children and 20 teachers from two kindergartens in Thailand. The purpose as to investigate the effectiveness of the 101 positive discipline training program on parenting practices, the quality of adult-child relationships, and children's social-emotional development. The findings of the previous research found that after the parents were participated in the 101s: A Guide to Positive Discipline training program, the quality of teacher – child relationships, children's school adjustment, and children's academic achievement were significantly improved. Moreover, the results also showed the significant correlations among parenting skills, teacher-child relationships, and children social-emotional development. There were significantly positive correlations between positive parenting practices and positive teacher-child relationships, positive parenting practices and students' self-directedness skills, and positive parents' interactions and students' school achievement.

In the present study, the findings also showed the effect of The 101s: A Guide to Positive Discipline training program on parents practices and children's executive function skills. It was confirmed the result in the previous research (Thanasetkorn (2009). The current research studied on the different groups from the previous research, using an ex-post facto design. The results also showed that the parents in the intervention group significantly had higher mean scores on positive parent interaction practice subscales and significantly had lower mean scores on negative parent interaction practice subscales as measured by Parent Interaction Checklist (PIC). It could be concluded that the 101s Parent Training had effective to improve parent interaction practice skills in Thailand.

The current study investigated the impact of the 101s parent training on parent practices and children's EF skills. The results showed that the 101s Positive Discipline training program had a major effect on parents' practices and children' EF skills. The findings were consistent with previous research in the 101s training program conducted by Masterson (2008), Thanasetkorn (2009), Thanasetkorn (2009), Pichitkusalachai et al. (2012), and Suthipan et al. (2012). The findings showed the increase of the parent positive practices and the reduction of the negative practices. It could be explained that The 101s training program helped the main caregivers, both teachers and parents, to know how to use the positive discipline techniques to control their own negative emotions and promote their children's social-emotional development.

5.2 The Impact of The 101s Parent Training on the children's executive function skills

In this study, the results indicate that *The 101s* positive discipline parent training had the effect on the increasing mean scores on children's executive function skills. The children whose parents receive *The 101s* parent training had significantly lower mean scores on Executive Function skills, comparing to the children in the control group as measured by the BRIEF-P, rated by their parents. It is important to note that the lower mean scores on BRIEF-P means the higher EF skills. Therefore, it could be concluded from the finding that the children in the intervention group had

higher executive function skills than the mean scores of the children in the control group. These results supported the hypothesis that the children in the intervention group significantly had lower mean scores on Executive Function skills, comparing to the children in the control group as measured by the BRIEF-P.

In addition, the current research is consistent with the previous research study on children training program conducted by Thorell et al. (2009). The previous research investigated the effect of computer training on children's EF skills with two groups of children; intervention and control groups. The children in the intervention group were participated in the computer training for memory and inhibition control for 5 weeks while the children in the control group played commercial available computer games. The results showed that the children in intervention groups were significantly improved their EF skills in the areas of memory and inhibit control. However, there was no any significance in the control group. The present research investigated the parent training program on children's executive function. The result showed that the children in the intervention group had significantly more improvement in the executive function skills, comparing to the children in the control group. It could be concluded that the children's executive function skills could be improved both by the training program targeting on the children and the training program targeting on the changes of parental practices.

Moreover, in Thailand, previous research indicated that the training interventions had significant impact on children's executive function skills. The finding of the current research is consistent with previous research on parent interaction training program (Thanasetkorn(2009), investigated the effect of The 101s: A Guide to Positive Discipline on parenting positive skill to increase the quality of teacher – child relationship, children's school adjustment, and children's academic achievement. The result showed the increasing positive parenting skills, the positive teacher – child relationships, and children's school adjustment. For this research, the results indicated that the children whose parents received *The 101s* parent training had significantly lower scores on Executive Function skills, comparing to the children in the control group as measured by the BRIEF-P. It could be concluded that the 101s parenting training resulted in the changes of parenting practices, teacher – child

relationship, children's school adjustment, children's academic achievement (Thanasetkorn, 2009), and also the children's executive function skills

The findings of this research were also consistent with previous research studies on the impact of the 101s training program on children's social-emotional and EF development. The findings showed the improvement in social-emotional and EF skills of the children in the intervention groups (Masterson, 2008; Thanasetkorn, 2009; Thanasetkorn, 2009; Pichitkusalachai et al., 2012; and Suthipan et al., 20120). The children whose either teachers or parents received the 101s positive discipline training program would significantly have higher mean scores on prosocial skills (Msterson, 2008), School adjustment (Thanasetkorn, 2009; Thanasetkorn, 2009), self-regulation skills (Pichitkusalachai et al., 2012), and EF skills (Suthipan, 2012), comparing to the children whose the parent rarely used positive discipline techniques. It could be possibly explained the phenomena based on brain development. In the early years of life, the neurons are connected together by synapse in order to create the brain network communicate the information and conduct behaviors. The brain network grows rapidly in the first three years of life. After the first three years, if it is not used, it is pruned. According to the children in the research studies, it could be possibly explained that the 101s positive discipline techniques are the tool for the trained parents to stimulate their children brain network in the area of executive function which relates to goal-directed behaviors.

Besides brain development, the findings could be possibly explained by the brain structure. Paul MacLean' Triune Brain showed that human brain has 3 layers, including the reptilian brain in which the core brain stem functions, the paleomammalian brain where the limbic system is located, and the neomammalian brain where neocortex and neocerebellum are located. The reptilian brain is related to human instinct for surviving. The paleomammalian brain is related to emotions, learning, and memories. The neomammalian brain is related to logical thinking, decision making, and problem solving. According to the research findings, it could be possibly explained that when the trained parents used the positive discipline techniques, the trained parents could response to the children's basic needs typically controlled by the reptilian brain. At the same time, the 101s positive discipline techniques helped the trained parents to teach and train the children's emotional

control functioning in the paleomammalian brain and stimulate the emergent metacognition such the plan and organizing skills fuction in the neomammalian brain. As a results, the children in the intervention groups performed better social-emotional and EF skills than did the children in the control group.

5.3 The Impact of The 101s Parent Training on the children's executive function skills

The results in the current research showed that there were statistically significant relationships among the five subscales of *The 101s* Parent Interaction Checklist (i.e., emotional support, behavior adjustment, verbal punishment, critical/harsh, and physical punishment) and the five subscales of BRIEF-P (i.e., inhibition control, shift, emotional control, working memory and plan/organize). In the current study, parent's emotion support skill and behavioral adjustment skill were negatively correlated with children with poor executive function abilities on Inhibition control, Shift, Emotion control, Working memory and Plan/Organize. Conversely, the parents' verbal punishment skills such the critical/harsh and Physical punishment were positively correlated with children with poor executive functions abilities on Inhibition control, Shift, Emotion control, Working memory and Plan/Organize. It was evident that parent's interactions in *The 101s* parent training are highly statistically associated with the executive function abilities of children rated by their parent. These results provide support for the hypothesis that *The 101s* training could result in a positive correlation between positive parent interactions and high children's executive function skills and would result in a negative correlation between negative parent interactions and high children's executive function skills.

The findings of the current research were consistent with previous research in the relationships between parent interaction practices and children's executive function skills (Bernier et al, 2010; Nelson III, 2007; and Thanasetkorn, 2009) Bernier et al. (2010) investigated the impact of three parenting dimensions (i.e., Maternal sensitivity, mind-mindedness and autonomy support while the children were 12 to 15 months old (N=80) on children's executive function, including working memory, impulse control, and set shifting at age 18-26 months. The results showed that all three

parenting dimensions were significantly related to the children's EF. The autonomy support was the strongest dimension to predict the children's EF skills at this age. In the present study, the finding showed the significant relationships between Parent Interaction Practices and children's executive function skills. There were significantly positive correlations between positive parent interactions and high children's executive function skills. The results also showed the significantly negative correlation between negative parent interactions and high children's executive function skills. It could be explained that the 101s positive discipline training program was the program for promoted parent's practice to support children's autonomy that helped the children to improve their executive function's skill.

The present research also consistent with the previous research conducted by Nelson III et al. (2007). Nelson III et al (2007) studied children's cognitive development in two groups; foster care and Institutionalized groups. Foster care was intervention group and Institutionalized was control group, they compared children in two groups at age 30 and 42 months. The results showed that, children in foster care intervention group had higher levels of attention to the emotion-eliciting tasks at 42 months of age. The researchers founded that the family-based intervention had the impact on children's cognitive development. While the present study on the effect of The 101s training program on parent practice and children's executive also showed the significant correlations among the parent interaction and children's executive function. Then, it could be explained that The 101s positive discipline techniques help the parents to learn positive way to deal with the children's behavior in home. Parent can apply technique to home's environment and parenting style to increase their children's executive function.

In addition, the previous research conducted by Thanasetkorn (2009) to investigate the effect of The 101s: A Guide to Positive Discipline on parenting positive skill to increase the quality of teacher – child relationship, children's school adjustment, and children's academic achievement in Thailand. The results showed the significantly positive correlations between parenting skills and teacher-child relationships, parenting skills and students' self-directedness and students' school achievement. In the present study studied the relationship among parent interaction practice and children's executive function. The result showed positive parenting

interaction practices such as emotion support and behavior management was negatively correlation with low ability of executive function skills and conversely, negative parenting interaction practices was positive correlation with low ability of executive function skills. The study showed that The 101s positive discipline techniques has relationship among parent's practices, teacher' practices and children's executive function skill. It could be explained that when parents use the positive discipline techniques to control their own negative emotions and promote their children's social-emotional development , then it related to stimulated executive's brain area such as neocortex , and can improve children's executive function skills.

5.4 Limitations and Suggestions for Future Research

In this research, there were limitations that should be considered with the findings. First, one of the major limitations of this research was the research design. Because the training program was already existed, the ex-post facto, posttest only design was utilized. The limitation of the ex-post facto design was that there is no random assignment to treatment so there could be inherent confounds in the variables studies. When the sample cannot be considered random, generalization is limited. However, the control group with matching method was used to reduce the gap of limitation.

Together, due to the ex-post facto, post-test only design, the process of pretest data collection was not possible. Therefore, In order to reduce this gap the follow up study or longitudinal study should be considered for the future research. For the future study, quasi-experimental, pre-test and post-test, control group design would be benefit.

Second, while developing the current research, background variables such as parent's levels of education, family's income, and children's age were considered as the factors that could affect the children's executive functions skills. However, the teacher's background variables such as teachers' practices, age, and experience may affect the children's executive function skills. Thus, for future research, the background variables should be on interest. Using the TIC (The Teacher Interaction Practices) to screen the teacher's practices is an alternative option.

Third, children in early childhood period have rapid development. The range of the children's age in the current study; however, was quite wide. For future research, children at the same age could be separately studied for gaining information of each children's age in depth.

Lastly, another limitation of this research is that the sample size was relatively small. Therefore, the ability to generalize the finding was limited. For the future research, replicated research using larger sample sizes in different school across the country is suggested.

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APPENDIX

COA. No. MU-IRB 2012/092.2905

Certificate of Approval
Mahidol University Institutional Review Board (MU-IRB)

Title of Project: The Impact of the 1 0 1 s Positive Discipline Parent Training on Parent Practices and Preschooler's Executive Function Skills (Thesis for Master Degree)

Principal Investigator: Miss Jutamard Suttho

Name of Institution: National Institute for Child and Family Development

Approval includes: 1) MU-IRB Submission form version received date 25 May 2012
2) Participant Information Sheet version date 21 May 2012
3) Informed Consent form version date 21 May 2012
4) Questionnaire for Children's Behavior version received date 25 April 2012

Mahidol University Institutional Review Board is in full compliance with International Guidelines for Human Research Protection such as Declaration of Helsinki, The Belmont Report, CIOMS Guidelines and the International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

Date of Approval: 29 May 2012

Date of Expiration: 28 May 2013

Signature of Chair: .....
(Professor Shusee Visalyaputra)

Signature of Head of the Institute: .....
(Professor Prasit Palittapongarnpim)
Vice President for Research

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เอกสารชี้แจงอาสาสมัครผู้เข้าร่วมโครงการวิจัยโดยการตอบแบบสอบถาม
และการพิทักษ์สิทธิผู้เข้าร่วมการวิจัย

เรียน ผู้ตอบแบบสอบถามทุกท่าน

ด้วยดิฉันนางสาวจุฑามาศ สุทโธ นักศึกษาปริญญาโทสาขาพัฒนาการมนุษย์ สถาบันแห่งชาติเพื่อการพัฒนาเด็กและครอบครัว มหาวิทยาลัยมหิดล มีความประสงค์ทำวิทยานิพนธ์เรื่อง **"**ผลของการอบรมผู้ปกครองเรื่อง 101s การสร้างวินัยเชิงบวกต่อการใช้วินัยเชิงบวกของผู้ปกครองและกระบวนการคิดขั้นสูงในเด็กปฐมวัย**"** ซึ่งประโยชน์ที่คาดว่าจะได้รับคือ 1.ผู้ปกครองทุกท่านที่เข้าร่วมงานวิจัยจะได้รับการอบรม 101s การสร้างวินัยเชิงบวก เพื่อเพิ่มศักยภาพในการเลี้ยงดูบุตรอย่างมีคุณภาพ โดยกลุ่มควบคุมจะได้รับการอบรม101s การสร้างวินัยเชิงบวก เมื่องานวิจัยสิ้นสุดลง 2.เด็กที่เข้าร่วมจะได้รับการการประเมินการทำงานของสมองระดับสูง(Behavior rating inventory of executive function preschool version) ทำให้เด็กและผู้ปกครองทราบความสามารถของเด็ก 3. เป็นแนวทางสำหรับครูและผู้ปกครองในการปฏิบัติตนที่เหมาะสมกับเด็กเพื่อให้เด็กเกิดการพัฒนาทางด้านกระบวนการคิดขั้นสูง 4. หน่วยงานที่ทำงานด้านการพัฒนาเด็ก เช่น โรงเรียน สถานสงเคราะห์ ศูนย์ฝึกอบรม และอื่นๆ สามารถนำผลจากการวิจัยไปประยุกต์ใช้เพื่อพัฒนาศักยภาพของเด็กที่อยู่ในความควบคุมดูแลของหน่วยงานได้

ท่านได้รับเชิญให้เข้าร่วมการวิจัยนี้เพราะท่านผ่านการอบรม101sการสร้างวินัยเชิงบวก ในการนี้ผู้วิจัยมีความจำเป็นต้องเก็บรวบรวมข้อมูลโดยใช้แบบสอบถามเรื่อง **"**ผลของการอบรมผู้ปกครองเรื่อง 101s การสร้างวินัยเชิงบวกต่อการใช้วินัยเชิงบวกของผู้ปกครองและกระบวนการคิดขั้นสูงในเด็กปฐมวัย**"** ซึ่งประกอบด้วยคำถาม 3 ชุด ดังนี้

ชุดที่1 แบบสอบถามข้อมูลทั่วไป แบ่งออกเป็น 2 ตอน

ตอนที่ 1 ข้อมูลทั่วไปของผู้ปกครอง เช่น การศึกษา รายได้ อาชีพ เป็นต้น

ตอนที่ 2 ข้อมูลทั่วไปของเด็ก เช่น โรคประจำตัว กิจกรรมที่บ้าน เป็นต้น

ชุดที่ 2 แบบสอบถามที่ใช้วัดทักษะการเลี้ยงดูบุตรของผู้ปกครอง (The 101s Parent Interaction Checklist (Thanasetkorn:2009) แบ่งออกเป็นข้อคำถามที่ใช้วัดการเลี้ยงดูแบบการใช้วินัยเชิงบวก จำนวน 10 ข้อ และการเลี้ยงดูแบบการใช้วินัยเชิงลบจำนวน 10 ข้อ

ชุดที่ 3 แบบประเมินการทำงานกระบวนการคิดขั้นสูงของเด็กปฐมวัย (BRIEF-P: Behavior rating inventory of executive function preschool version) มีข้อคำถามทั้งหมด 63 ข้อ ซึ่งจะประเมินทั้งหมด 5 องค์ประกอบได้แก่ การยับยั้งชั่งใจ(Inhibit), การเปลี่ยนโหมดความคิดความ

สนใจ(shift), ความจำระยะสั้น(Working memory), การควบคุมอารมณ์(Emotional Control)และการวางแผน (Plan/organize)

ใช้เวลาในการตอบแบบสอบถามประมาณ 30 นาทีผู้วิจัยจะขอรับแบบสอบถามคืนโดยท่านสามารถส่งคืนได้ที่คุณครูอนุบาล

เนื่องจากแบบสอบถามประกอบด้วยคำถามหลายส่วน จึงขอความกรุณาให้ท่านพิจารณาตอบตามความรู้สึกของท่านให้มากที่สุด โดยข้อมูลและคำตอบทั้งหมดจะถูกปกปิดเป็นความลับ และจะนำมาใช้ในการวิเคราะห์ผลการศึกษาครั้งนี้โดยออกมาเป็นภาพรวมของการวิจัยเท่านั้น จึงไม่มีผลกระทบใดๆต่อผู้ตอบหรือหน่วยงานของผู้ตอบ เนื่องจากไม่สามารถนำมาสืบค้นเจาะจงหาผู้ตอบได้ ท่านมีสิทธิ์ที่จะไม่ตอบคำถามข้อใดข้อหนึ่ง หากท่านไม่สบายใจหรืออึดอัดที่จะตอบคำถามนั้น หรือไม่ตอบแบบสอบถามทั้งหมดเลยก็ได้ โดยไม่มีผลกระทบต่อการปฏิบัติงานใดๆของท่าน ท่านมีสิทธิ์ที่จะไม่เข้าร่วมการวิจัยก็ได้โดยไม่ต้องแจ้งเหตุผล

หากผู้เข้าร่วมวิจัยมีข้อสงสัยเกี่ยวกับการวิจัยหรือแบบสอบถาม สามารถติดต่อสอบถามได้ที่นางสาวจุฑามาศ สุทโธสถานที่ติดต่อสถาบัน**แห่งชาติเพื่อการพัฒนาเด็กและครอบครัว มหาวิทยาลัยมหิดล 999 ถนนพุทธมณฑลสาย4 ตำบลศาลายา อำเภอพุทธมณฑล จังหวัดนครปฐม 73170 ในวันและเวลาราชการ หรือ โทรศัพท์ที่ติดต่อได้ที่เบอร์ 0895563270**

โครงการวิจัยนี้ได้รับการพิจารณารับรองจาก คณะกรรมการจริยธรรมการวิจัยในคนของมหาวิทยาลัยมหิดล สำนักงานอยู่ที่ สำนักงานอธิการบดีมหาวิทยาลัยมหิดล ถนนพุทธมณฑลสาย 4 ตำบลศาลายา อำเภอพุทธมณฑล จังหวัดนครปฐม 73170 หมายเลขโทรศัพท์ 02-849-6223-5 โทรสาร 02-849-6223 หากท่านได้รับการปฏิบัติไม่ตรงตามที่ระบุไว้ ท่านสามารถติดต่อประธานกรรมการฯหรือผู้แทน ได้ตามสถานที่และหมายเลขโทรศัพท์ข้างต้น

ขอขอบพระคุณที่กรุณาสละเวลาในการตอบแบบสอบถาม

ขอแสดงความนับถือ

นางสาวจุฑามาศ สุทโธ

หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัยโดยได้รับการบอกกล่าวและเต็มใจ

วันที่..... เดือน..... พ.ศ.....

ข้าพเจ้า.....อายุ.....ปี อาศัยอยู่บ้านเลขที่..... ถนน.....ตำบล.....อำเภอ ..... จังหวัด.....รหัสไปรษณีย์..... โทรศัพท์ .....

ขอแสดงเจตนายินยอมเข้าร่วมโครงการวิจัยเรื่องผลของการอบรมผู้ปกครองเรื่อง 101s การสร้างวินัยเชิงบวกต่อการใช้วินัยเชิงบวกของผู้ปกครองและกระบวนการคิดขั้นสูงในเด็กปฐมวัย

โดยข้าพเจ้าได้รับทราบรายละเอียดเกี่ยวกับที่มาและจุดมุ่งหมายในการทำวิจัย รายละเอียดขั้นตอนต่างๆ ที่จะต้องปฏิบัติหรือได้รับการปฏิบัติ ประโยชน์ที่คาดว่าจะได้รับของการวิจัยและความเสี่ยงที่อาจจะเกิดขึ้นจากการเข้าร่วมการวิจัย รวมทั้งแนวทางป้องกันและแก้ไขหากเกิดอันตรายขึ้น ค่าตอบแทนที่จะได้รับ ค่าใช้จ่ายที่ข้าพเจ้าจะต้องรับผิดชอบจ่ายเอง โดยได้อ่านข้อความที่มีรายละเอียดอยู่ในเอกสารชี้แจงผู้เข้าร่วมการวิจัยโดยตลอด อีกทั้งยังได้รับคำอธิบายและตอบข้อสงสัยจากหัวหน้าโครงการวิจัยเป็นที่เรียบร้อยแล้ว โดยไม่มีสิ่งใดปิดบังซ่อนเร้น

ข้าพเจ้าจึงสมัครใจเข้าร่วมในโครงการวิจัยนี้ :

ข้าพเจ้าได้ทราบถึงสิทธิ์ที่ข้าพเจ้าจะได้รับข้อมูลเพิ่มเติมทั้งทางด้านประโยชน์และโทษจากการเข้าร่วมการวิจัย และสามารถถอนตัวหรืองดเข้าร่วมการวิจัยได้ทุกเมื่อ โดยจะไม่มีผลกระทบต่อการบริการและการรักษาพยาบาลที่ข้าพเจ้าจะได้รับต่อไปในอนาคต และยินยอมให้ผู้วิจัยใช้ข้อมูลส่วนตัวของข้าพเจ้าที่ได้รับจากการวิจัย แต่จะไม่เผยแพร่ต่อสาธารณะเป็นรายบุคคล โดยจะนำเสนอเป็นข้อมูลโดยรวมจากการวิจัยเท่านั้น

หากข้าพเจ้ามีข้อข้องใจเกี่ยวกับขั้นตอนของการวิจัย หรือหากเกิดผลข้างเคียงที่ไม่พึงประสงค์จากการวิจัยขึ้นกับข้าพเจ้า ข้าพเจ้าจะสามารถติดต่อกับนางสาวจุฑามาศ สุทโธ โทร 089-5563270

หากข้าพเจ้าได้รับการปฏิบัติไม่ตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าจะสามารถติดต่อกับประธานคณะกรรมการจริยธรรมการวิจัยในคนหรือผู้แทน ได้ที่ สำนักงานคณะกรรมการจริยธรรมการวิจัยในคน กองบริหารงานวิจัย สำนักงานอธิการบดี มหาวิทยาลัยมหิดล โทร. 02-849-6223-5 โทรสาร 02-849-6223

ข้าพเจ้าเข้าใจข้อความในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และหนังสือแสดงเจตนายินยอมนี้โดยตลอดแล้ว จึงลงลายมือชื่อไว้

ลงชื่อ.....ผู้เข้าร่วมการวิจัย/ผู้แทนโดยชอบธรรม/วันที่.....

(.....)

ลงชื่อ.....ผู้ให้ข้อมูลและขอความยินยอม/หัวหน้าโครงการวิจัย/ วันที่.....

(.....)

ในกรณีผู้เข้าร่วมการวิจัยไม่สามารถอ่านหนังสือได้ผู้ที่อ่านข้อความทั้งหมดแทนผู้เข้าร่วมการวิจัยคือ..... จึงได้ลงลายมือชื่อไว้เป็นพยาน

ลงชื่อ.....

พยาน/ วันที่.....

(.....)

แบบสอบถามสำหรับผู้ปกครอง

ขอให้ท่านโปรดอ่านข้อความต่อไปนี้แล้วกรุณาเติมข้อความลงในช่องว่าง และเขียน ✓ ลงใน หน้าข้อความที่ตรงกับความเป็นจริงมากที่สุด และกรุณาทำให้ครบทุกข้อ เพื่อความสมบูรณ์ของแบบสอบถาม

ส่วนที่ 1 ข้อมูลเกี่ยวกับผู้ปกครอง

1. ผู้ตอบแบบสอบถามมีความเกี่ยวข้องกับเด็กเป็น
   - ❒ บิดา ❒ มารดา
   - ❒ ปู่/ ย่า/ ตา/ ยาย ❒ ลุง/ ป้า/ น้า/ อา
   - ❒ อื่นๆ (ระบุ).....
2. เด็กอยู่ภายใต้การดูแลของ
   - ❒ บิดาและมารดา ❒ บิดา
   - ❒ มารดา ❒ อื่นๆ(ระบุ).....
3. จำนวนสมาชิกในครอบครัว..... คน
4. ระดับการศึกษาของ

   บิดา ❒ต่ำกว่ามัธยมศึกษา ❒มัธยมศึกษา ❒ปริญญาตรี
   ❒ปริญญาโท ❒ปริญญาเอก ❒อื่นๆ (ระบุ) .....

   มารดา ❒ต่ำกว่ามัธยมศึกษา ❒มัธยมศึกษา ❒ปริญญาตรี
   ❒ปริญญาโท ❒ปริญญาเอก ❒อื่นๆ (ระบุ) .....
5. อาชีพของ

   บิดา (โปรดระบุ).....

   มารดา (โปรดระบุ).....
6. รายได้เฉลี่ยของครอบครัวต่อเดือน (บาท)

   ❒ต่ำกว่า 10,000 ❒20,000 – 30,000 ❒40,000 – 50,000
   ❒10,000 – 20,000 ❒30,000 – 40,000 ❒50,000 ขึ้นไป

ส่วนที่ 2 ข้อมูลเกี่ยวกับเด็ก

1. เพศ ❒ชาย ❒หญิง
2. เด็กอายุ.....ปี.....เดือน (เกิดวันที่..... เดือน..... ปี.....)
3. กำลังศึกษาอยู่ในระดับชั้น.....
4. เด็กมีโรคประจำตัวหรือไม่

   ❒ไม่มี ❒ มี (ระบุ).....
5. เด็กมีความพิการทางด้านร่างกายหรือไม่

   ❒ ไม่มี ❒มี (ระบุ).....
6. ตั้งแต่แรกเกิดถึงปัจจุบัน เด็กมีปัญหาเรื่องการเรียนหรือไม่ เช่น ความบกพร่องทางการเรียนรู้(Learning Disability)

   ❒ ไม่มี ❒ถ้ามี (ระบุ).....
7. คุณคิดว่าที่ผ่านมาสุขภาพของเด็กเป็นอย่างไร

   ❒สุขภาพดีมาก (ไม่ค่อยป่วยหรือน้อยกว่า 2 ครั้ง / ปี)

❒สุขภาพดี (ป่วยบ้าง 2-4 ครั้ง / ปี)

❒สุขภาพไม่ค่อยดี (ป่วยบ่อย หรือมากกว่า 5 ครั้ง / ปี)

8. เคยมีอาการชักหรือไม่

❒ไม่เคย ❒เคย แต่ไม่ทราบสาเหตุ

❒เคย ทราบสาเหตุ คือ (ระบุสาเหตุ ระยะเวลาที่ชัก, มีอาการบ่อยหรือไม่ เป็นต้น) ……

9. โดยเฉลี่ยเด็กนอนหลับ (ในเวลากลางคืน).....ชั่วโมงต่อวัน

10. เด็กมีปัญหาในการนอนหลับหรือไม่

❒ไม่มี ❒มี(ระบุ).....จำนวน.....ครั้งต่อเดือน

11. เด็กมีโอกาสได้เรียนพิเศษเกี่ยวกับกิจกรรมต่างๆที่เพิ่มจากการเรียนการสอนในโรงเรียน

- กิจกรรมส่งเสริมพัฒนาการ ❒ไม่ได้รับ ❒ได้รับ .....ชั่วโมงต่อสัปดาห์
- กิจกรรมทางด้านภาษา ❒ไม่ได้รับ ❒ได้รับ .....ชั่วโมงต่อสัปดาห์
- กิจกรรมทางด้านศิลปะ ❒ไม่ได้รับ ❒ได้รับ .....ชั่วโมงต่อสัปดาห์
- กิจกรรมทางด้านวิชาการ ❒ไม่ได้รับ ❒ได้รับ .....ชั่วโมงต่อสัปดาห์
- กิจกรรมทางด้านกีฬา ❒ไม่ได้รับ ❒ได้รับ .....ชั่วโมงต่อสัปดาห์
- กิจกรรมอื่นๆ (ระบุ)…….....ได้รับ.....ชั่วโมงต่อสัปดาห์

12. บุตรของท่านเริ่มเข้ามาศึกษาในโรงเรียนปัจจุบันตั้งแต่ระดับชั้นใด.....

13. เด็กใช้เวลาในการทำกิจกรรมอะไรมากที่สุดเมื่ออยู่ที่บ้าน

1. ……เป็นเวลา.....ชั่วโมงต่อสัปดาห์
2. ……เป็นเวลา.....ชั่วโมงต่อสัปดาห์
3. ……เป็นเวลา.....ชั่วโมงต่อสัปดาห์
4. ……เป็นเวลา.....ชั่วโมงต่อสัปดาห์

14. ท่านทำกิจกรรมอะไรร่วมกับบุตรหลานของท่าน

1. ……เป็นเวลา.....ชั่วโมงต่อสัปดาห์
2. ……เป็นเวลา.....ชั่วโมงต่อสัปดาห์
3. ……เป็นเวลา.....ชั่วโมงต่อสัปดาห์
4. ……เป็นเวลา.....ชั่วโมงต่อสัปดาห์

ขอขอบพระคุณในการให้ความร่วมมือ
นางสาวจุฑามาศ สุทโธ

แบบสอบถามเกี่ยวกับเด็ก (สำหรับผู้ปกครอง)

คำชี้แจง ขอให้ท่านสังเกตพฤติกรรมของบุตรหลานของท่าน และเขียน ✓ ในช่องความถี่ของพฤติกรรมที่เกิดขึ้นในระยะ 6 เดือนที่ผ่านมา **กรุณาทำให้ครบทุกข้อ** เพื่อความสมบูรณ์ของแบบสอบถาม

พฤติกรรม	ความถี่ของการเกิดพฤติกรรม		
	เป็นประจำ	บางครั้ง	ไม่เคย
1.บุตรของท่านแสดงอารมณ์มากเกินไปในเรื่องเล็กน้อย			
2.เมื่อให้ทำงานสองอย่าง บุตรของท่านจำได้แค่อย่างใดอย่างหนึ่ง			
3.บุตรของท่านไม่ระวังว่าพฤติกรรมของตนส่งผลหรือรบกวนผู้อื่น			
4.เมื่อบอกขั้นตอนให้บุตรของท่านทำความสะอาด บุตรของท่านไม่สามารถทำตามขั้นตอนนั้นๆได้			
5.บุตรของท่านมักแสดงอาการหงุดหงิด อารมณ์เสียเมื่อพบสถานการณ์ใหม่ๆ			
6.บุตรของท่านมักจะแสดงอารมณ์โกรธรุนแรง เดือดดาลง่าย			
7.บุตรของท่านมีความยากลำบากในการทำงานให้เสร็จตามขั้นตอนและตามเวลาที่กำหนด			
8.บุตรของท่านไม่หยุดหัวเราะในเรื่องหรือเหตุการณ์ที่ตลกแม้ว่าผู้อื่นหยุดแล้ว			
9.จำเป็นต้องบอกให้บุตรของท่านเริ่มทำสิ่งต่างๆ แม้ว่าสิ่งนั้นเป็นสิ่งที่บุตรของท่านตั้งใจจะทำเอง			
10.บุตรของท่านปรับตัวยากเมื่อเจอกับคนที่เพิ่งรู้จัก เช่น พี่เลี้ยงใหม่ ครูใหม่ เพื่อนใหม่			
11.บุตรของท่านหงุดหงิด อารมณ์เสียได้ง่าย			
12.บุตรของท่านไม่มีสมาธิอย่างต่อเนื่องในการทำกิจกรรมอย่างใดอย่างหนึ่ง เช่น ตอนทำกิจกรรม เล่นเกม หรือต่อจิ๊กซอว์			
13.บุตรของท่านต้องการคำชี้แนะอย่างใกล้ชิดมากกว่าเพื่อนวัยเดียวกัน			
14.เมื่อให้บุตรของท่านไปหยิบสิ่งของ บุตรของท่านจะลืมสิ่งที่บอกให้ไปหยิบ			

พฤติกรรม	ความถี่ของการเกิดพฤติกรรม		
	เป็นประจำ	บางครั้ง	ไม่เคย
15.บุตรของท่านแสดงอาการหงุดหงิด อารมณ์เสียเมื่อเปลี่ยนแผนหรือเปลี่ยนกิจวัตรประจำวัน เช่น ลำดับของกิจกรรมที่ทำในแต่ละวัน การเพิ่มงานในนาทีสุดท้ายของกำหนดการ เปลี่ยนเส้นทางการเดินทาง			
16.บุตรของท่านแสดงอารมณ์โกรธ เดือดดาลในเรื่องเล็กๆน้อยๆ			
17.บุตรของท่านทำความผิดพลาดซ้ำแล้วซ้ำอีก แม้จะได้รับการช่วยเหลือแล้วก็ตาม			
18.บุตรของท่านแสดงความก้าวร้าวหรือไร้สาระมากกว่าคนอื่นในกลุ่ม เช่น ในงานวันเกิด ตอนเล่นกับเพื่อนๆ			
19.บุตรของท่านไม่สามารถหาเสื้อผ้า รองเท้า ของเล่น หรือหนังสือ แม้ว่าจะบอกสถานที่วางแล้วก็ตาม			
20.บุตรของท่านใช้เวลานานกว่าจะรู้สึกอุ่นใจในสถานที่หรือสถานการณ์ใหม่ๆ เช่น ญาติห่างๆที่มาเยี่ยม หรือการพบเพื่อนใหม่			
21.บุตรของท่านมีอารมณ์ไม่คงที่ เดี๋ยวดีเดี๋ยวร้าย			
22.บุตรของท่านทำความผิดพลาดในเรื่องง่ายๆ			
23.บุตรของท่านมักมีอาการหงุดหงิด ไม่อยู่นิ่งหรือชอบดิ้นไปมา			
24.บุตรของท่านมีความยากลำบากในการทำตามกิจวัตรที่กำหนด ไม่ว่าจะเป็นการนอน การกิน หรือการทำกิจกรรม			
25.บุตรของท่านถูกรบกวนได้ง่ายด้วยเสียงดัง แสงจ้า หรือกลิ่นบางกลิ่น			
26.บุตรของท่านแสดงอารมณ์เกินกว่าเหตุในเหตุการณ์เล็กน้อย			
27.บุตรของท่านมีความยากลำบากในการทำกิจกรรมหรืองานที่มากกว่าหนึ่งขั้นตอน			
28.บุตรของท่านมักมีอาการหุนหันพลันแล่น ตัดสินใจเร็ว			
29.บุตรของท่านมีความยากลำบากในการคิดแก้ปัญหาด้วยวิธีการต่างๆ เมื่อมีอุปสรรคในการทำกิจกรรมนั้นๆ			
30.บุตรของท่านแสดงอาการวิตกกังวลใจหรือเครียด เมื่อเปลี่ยนสิ่งแวดล้อมใหม่ เช่น เฟอร์นิเจอร์ใหม่ ของในห้องถูกย้าย หรือเสื้อผ้าใหม่			
31.บุตรของท่านโกรธหรือร้องไห้รุนแรงแต่จู่ๆก็หยุดในทันที			
32.บุตรของท่านต้องการความช่วยเหลือจากผู้ใหญ่ในการทำงานต่างๆ			

พฤติกรรม	ความถี่ของการเกิดพฤติกรรม		
	เป็นประจำ	บางครั้ง	ไม่เคย
33.บุตรของท่านไม่รู้ว่าสิ่งที่ตนเองทำ ทำให้ผู้อื่นตอบสนองต่อตนเองในแง่ลบ			
34.เมื่อได้รับคำสั่งให้ทำความสะอาดหรือเก็บของเล่น บุตรของท่านไม่ยอมทำ และปล่อยให้ผู้อื่นทำแทน			
35.บุตรของท่านมีความกังวลเมื่อต้องเปลี่ยนกิจกรรม			
36.บุตรของท่านตอบสนองอย่างรุนแรงมากกว่าเด็กคนอื่นในสถานการณ์เดียวกัน			
37.บุตรของท่านมักลืมว่าตนกำลังทำอะไรอยู่ในระหว่างทำกิจกรรมนั้น			
38.บุตรของท่านไม่ตระหนักว่าการกระทำบางอย่างของตนเองรบกวนผู้อื่น			
39.บุตรของท่านมักติดอยู่กับรายละเอียดเล็กๆน้อยๆของงานและไม่สนใจความคิดหลักของงาน			
40.บุตรของท่านมีความกังวลเมื่อต้องเข้าร่วมกิจกรรมทางสังคมที่ไม่คุ้นเคย เช่น ก่อกวนในงานวันเกิด			
41.บุตรของท่านตื่นตระหนกแม้ในกิจกรรมที่ทำเป็นประจำ			
42.บุตรของท่านมีความยากลำบากในการทำงานให้สำเร็จ เช่น การเล่นเกม ต่อจิ๊กซอว์			
43.บุตรของท่านไม่สามารถควบคุมตนเองได้เมื่อเทียบกับเพื่อนวัยเดียวกัน			
44.บุตรของท่านไม่สามารถหาสิ่งของในห้องได้ แม้ว่าจะบอกสถานที่ตั้งให้แล้ว			
45.บุตรของท่านต่อต้านการเปลี่ยนแปลงกิจวัตรประจำวัน อาหาร สถานที่ เป็นต้น			
46.หลังจากเผชิญกับปัญหา บุตรของท่านจะรู้สึกผิดหวังเสียใจเป็นเวลานาน			
47.บุตรของท่านไม่สามารถจดจ่อในหัวข้อเดิมที่กำลังพูดคุยได้			
48.บุตรของท่านมักพูดหรือเล่นเสียงดังมากเกินไป			
49.บุตรของท่านทำงานที่มอบหมายไม่สำเร็จ แม้ว่าบอกวิธีทำแล้วก็ตาม			

พฤติกรรม	ความถี่ของการเกิดพฤติกรรม		
	เป็นประจำ	บางครั้ง	ไม่เคย
50.บุตรของท่าน ตื่นตระหนกกับสถานการณ์ที่วุ่นวายมีคนพลุกพล่าน เสียงดัง เป็นต้น			
51.บุตรของท่านมีความยากลำบากในการเริ่มต้นทำกิจกรรม แม้ว่าจะได้รับคำแนะนำแล้วก็ตาม			
52.บุตรของท่านแสดงความก้าวร้าวมากหรือไม่สามารถควบคุมตนเองได้			
53.บุตรของท่านไม่พยายามอย่างเต็มที่ในการทำกิจกรรม			
54.บุตรของท่านไม่สามารถหยุดการกระทำแม้ว่าจะมีคนขอให้หยุดแล้วก็ตาม			
55.บุตรของท่านไม่สามารถอธิบายเรื่องราว เหตุการณ์จนจบเรื่องได้			
56.บุตรของท่านทำงานที่ได้รับมอบหมายหรือกิจกรรมต่างๆเสร็จเร็วเกินไป			
57.บุตรของท่านไม่สนใจว่างานที่ทำจะออกมาดีหรือไม่			
58.บุตรของท่านวอกแวกได้ง่ายระหว่างทำกิจกรรม			
59.บุตรของท่านลืมในเรื่องที่บอก แม้ว่าเวลาจะผ่านไปเพียงครู่เดียว			
60.บุตรของท่านมักจะดื้อและไม่มีเหตุผล			
61.บุตรของท่านมีระยะความสนใจสั้น			
62.บุตรของท่านมักเล่นอย่างไม่ระวังหรือประมาทในสถานการณ์ที่อาจเกิดอันตรายได้ (เช่น ในสนามเด็กเล่น ในสระว่ายน้ำ)			
63.บุตรของท่านไม่สนใจว่างานที่ทำจะถูกหรือผิด			

ลงชื่อ_____

(_____)

ขอขอบพระคุณในการให้ความร่วมมือ

นางสาวจุฑามาศ สุทโธ

18/05/2554

BRIEF®-P Preschool Scoring Summary

Date ____/____/____

Child's Name _____ Gender _____ Age _____ Relation of Rater to Child _____

Scoring Instructions

1. Remove the perforated stubs from the Rating Form and detach the answer sheet to reveal the Scoring Sheet.
2. Transfer the circled item score for each item to the box provided in that item row.
3. Sum the item scores in each column and enter the subtotal in the box at the bottom of the column.
4. Transfer the scale subtotals for Items 1-30 to the appropriate box in the row for subtotals at the bottom of the facing page.
5. Sum the two subtotals for each scale and enter the total in the Total scale raw scores box.
6. Transfer each scale raw score to the raw score column in the Scoring Summary Table below.
7. Sum the raw scores for Inhibit and Emotional Control (EC) to obtain the raw score for the Inhibitory Self-Control Index (*ISCI*).
8. Sum the raw scores for Shift and Emotional Control (EC) to obtain the raw score for the Flexibility Index (*FI*).
9. Sum the raw scores for Working Memory (WM) and Plan/Organize (PO) to obtain the raw score for the Emergent Metacognition Index (*EMI*).
10. Sum the raw scores for the five scales (Inhibit + Shift + EC + WM + PO) to obtain the raw score for the Global Executive Composite (*GEC*).
11. Locate the norms tables for the appropriate normative comparison group in the Appendix tables of the BRIEF-P Professional Manual. Find the raw score for each scale, index, and *GEC* in the raw score column and read across the row to find the corresponding *T* score and percentile. Enter the *T* score and percentile in the appropriate boxes in the Scoring Summary Table. Locate the 90% Confidence Interval (CI) value for each scale, index, and *GEC* at the bottom of the appropriate column, calculate the low end (subtract the CI value from the *T* score) and high end (add the CI value to the *T* score) of the interval, and enter those values in the spaces provided in the 90% CI column.

Scoring Summary Table

Scale/Index	Raw score	*T* score	%ile	90% CI
Inhibit				___ – ___
Shift				___ – ___
Emotional Control (EC)				___ – ___
Working Memory (WM)				___ – ___
Plan/Organize (PO)				___ – ___
ISCI (Inhibit + EC)				___ – ___
FI (Shift + EC)				___ – ___
EMI (WM + PO)				___ – ___
GEC (Inhibit + Shift + EC + WM + PO)				___ – ___

Negativity Scale

1. Negativity items are indicated with a [N] in the margin of the Scoring Sheet. For each Negativity item with a score of 3, circle that item number in the column to the right.
2. Count the number of circled item numbers to determine the **Negativity score**.
3. Using the Negativity Score table below, circle the appropriate protocol classification corresponding to that score.

Negativity score	Cumulative %	
	Parent	Teacher
0 – 2	0 – 97 Acceptable	0 – 98 Acceptable
3	98 – 99 Acceptable	99 Elevated
≥4	100 Elevated	100 Elevated

Item
30.
44.
46.
47.
53.
55.
56.
57.
59.
63.

Negativity score ____

Inconsistency Scale

For each item pair:

1. Transfer the item score for each item (marked (I) in the margin of the Scoring Sheet) to the appropriate item pairs box.
2. Subtract the ***lesser*** number from the ***greater*** number and enter the result in the *Difference* column.
3. Sum the numbers in the *Difference* column to obtain the **Inconsistency score**. Circle the appropriate protocol classification corresponding to that score in the table below.

Inconsistency score	Cumulative %	
	Parent	Teacher
0 – 6	0 – 94 Acceptable	0 – 98 Acceptable
7	97 – 98 Acceptable	99 Inconsistent
≥8	99 – 100 Inconsistent	100 Inconsistent

Item	Score	Item	Score		Difference
1.		11.		→	
3.		33.		→	
5.		45.		→	
10.		20.		→	
11.		26.		→	
16.		21.		→	
18.		52.		→	
33.		38.		→	
43.		52.		→	
48.		54.		→	

Inconsistency score ____

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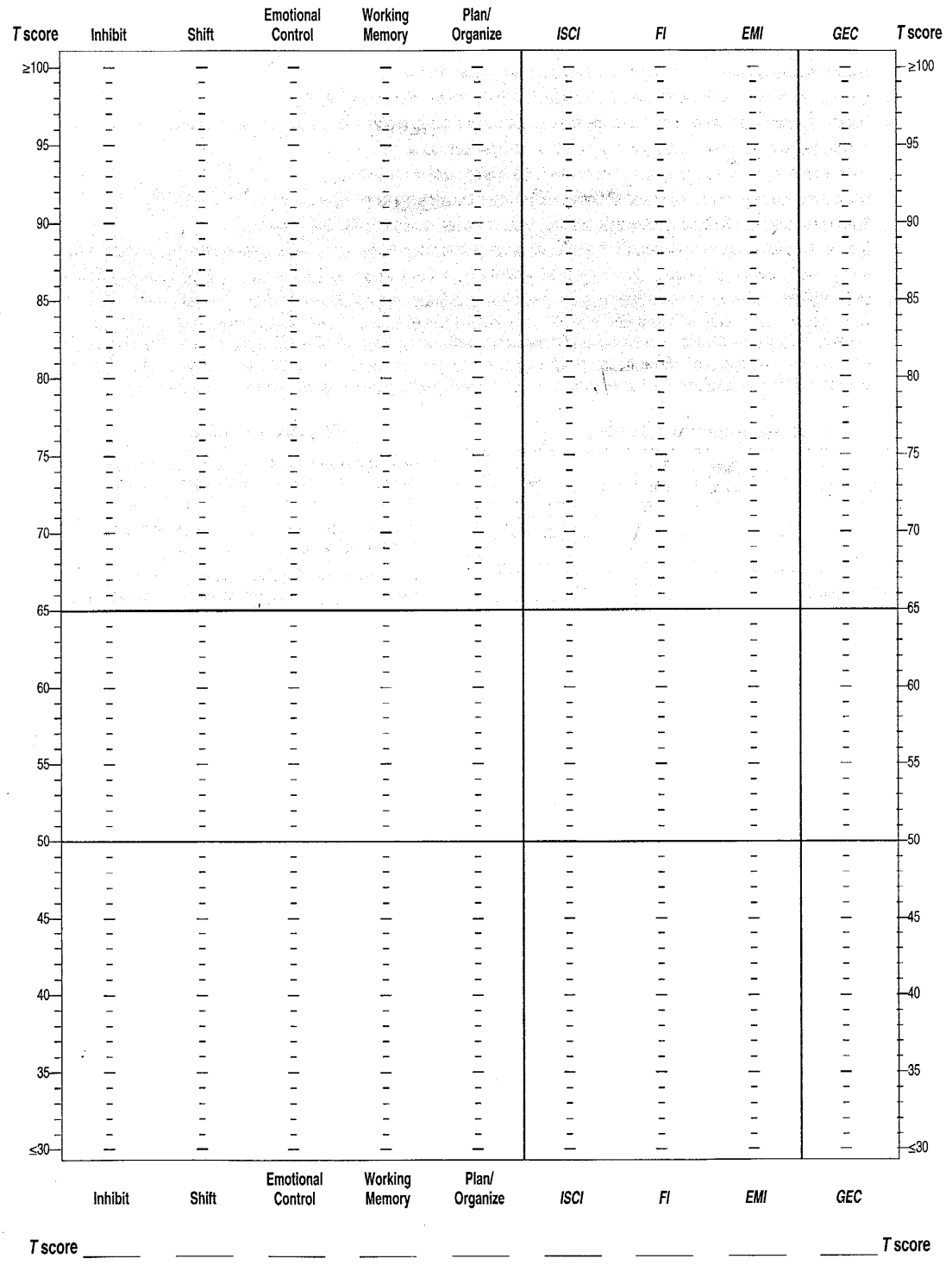
BRIEF®-P

Preschool Profile Form

Date ____/____/____

Child's Name _____ Gender _____ Age _____ Relation of Rater to Child _____



Instructions: Transfer the Scale scores, Index scores, and *GEC T* scores from the Scoring Summary Table on the reverse side of this form. Mark an X on the tick mark corresponding to each *T* score. Connect the Xs (without crossing the vertical lines) to create a profile.

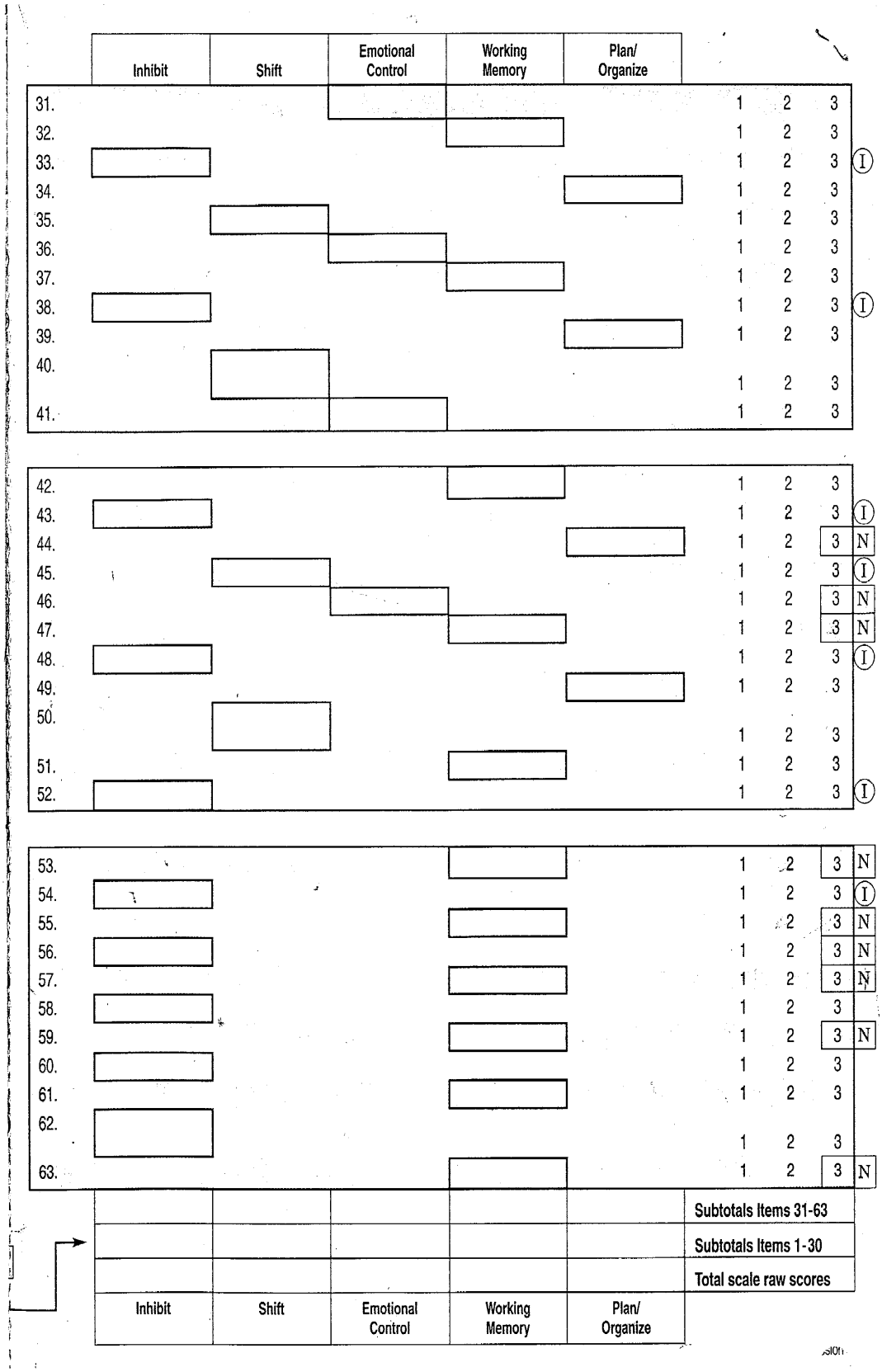
Child's Name _____ Gender _____ Age _____ Birth Date ____/____/____

Your Name _____ Today's Date ____/____/____

Relationship to Child: ☐ Mother ☐ Father ☐ Teacher* ☐ Other* _____

How well do you know the child? ☐ Not Well ☐ Moderately Well ☐ Very Well *Have known the child for____ ☐ months ☐ years.

	Inhibit	Shift	Emotional Control	Working Memory	Plan/ Organize			
1.						1	2	3
2.						1	2	3
3.						1	2	3
4.						1	2	3
5.						1	2	3
6.						1	2	3
7.						1	2	3
8.						1	2	3
9.						1	2	3
10.						1	2	3
11.						1	2	3
12.						1	2	3
13.						1	2	3
14.						1	2	3
15.						1	2	3
16.						1	2	3
17.						1	2	3
18.						1	2	3
19.						1	2	3
20.						1	2	3
21.						1	2	3
22.						1	2	3
23.						1	2	3
24.						1	2	3
25.						1	2	3
26.						1	2	3
27.						1	2	3
28.						1	2	3
29.						1	2	3
30.						1	2	3
						Subtotals Items 1-30		


Inhibit
Shift
Emotional Control
Working Memory
Plan/ Organize
31. 1 2 3
32. 1 2 3
33. 1 2 3 I
34. 1 2 3
35. 1 2 3
36. 1 2 3
37. 1 2 3
38. 1 2 3 I
39. 1 2 3
40. 1 2 3
41. 1 2 3
42. 1 2 3
43. 1 2 3 I
44. 1 2 3 N
45. 1 2 3 I
46. 1 2 3 N
47. 1 2 3 N
48. 1 2 3 I
49. 1 2 3
50. 1 2 3
51. 1 2 3
52. 1 2 3 I
53. 1 2 3 N
54. 1 2 3 I
55. 1 2 3 N
56. 1 2 3 N
57. 1 2 3 N
58. 1 2 3
59. 1 2 3 N
60. 1 2 3
61. 1 2 3
62. 1 2 3
63. 1 2 3 N
Subtotals Items 31-63
Subtotals Items 1-30
Total scale raw scores
Inhibit
Shift
Emotional Control
Working Memory
Plan/ Organize

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