CONTENTS

Acknowle	lgement	c
Abstract in	n Thai	e
Abstract in	n English	g
List of Tal	bles ab 20	n
List of Fig	n English bles ures	q
Statement	of Originality in Thai	r
Statement	of Originality in English	S
List of Pul	olications and Presentations	t
Chapter 1	Introduction	1
1.1	Rationale	1
1.2	Purposes of the study	6
1.3	The definitions used in this study	7
1.4	The benefits of study	7
Chapter 2	Literature Review	8
2.1	Learning disabilities	8
	2.1.1 Definition of learning disabilities	8
(2.1.2 Type of learning disabilities	10
2.2	Information processing theory	13
	2.2.1 Basic theory	13
	2.2.2 Information processing and occupational	16
	performance	
	2.2.3 Information processing during school ages	19
	2.2.4 Information processing and learning difficulties	21
	2.2.5 Assessment of information processing strategy	22

	2.2.6 The Perceive, Recall, Plan and Perform (PRPP)	28
	System of Task Analysis	
	2.2.7 The Perceive, Recall, Plan and Perform (PRPP) System: Thai Version	33
	2.2.8 The Perceive, Recall, Plan and Perform (PRPP) of intervention	34
	2.2.9 Four-Quadrants Model of Facilitated Learning	35
	(4QM)	
2.3	Social competence	38
	2.3.1 Overview of the definition of social competence	38
	2.3.2 Social competence and learning disabilities	39
	2.3.3 Relationship between information processing strategy	40
	and social competence in children with LD	
	2.3.4 Assessment of social competence	40
	2.3.5 The social Competence Scale	46
2.4	Related Research	47
Chapter 3	Methodology	52
3.1	Scope of the research	52
3.2	Plan and research methodology	52
3.3		53
~	strategy application on Academic and Play activities	
	identified by the PRPP System: Thai Version in Thai	
	children with learning disabilities	
3.4	Phase Two: Relationship between information processing	60
	strategy during the Academic activity and social	
	competence ability in Thai children with learning	
	disabilities	

Page

Phase Three: The effect of the combination of the PRPP of	64
intervention and the 4QM of facilitated learning on	
information processing strategies application during the	
Academic activity in Thai children with learning disabilities	
Results	71
Phase One: Exploratory study of information processing	71
strategy application on Academic and Play activities	
identified by the PRPP System: Thai Version in Thai children	
with learning disabilities	
4.1.1 Research Question 1	71
4.1.2 Demographic characteristics	72
4.1.3 Level of Task Mastery	72
4.1.4 Master of errors impacting on performance	75
4.1.5 Research Question 2	78
Phase Two: Relationship between information processing	96
strategy during the Academic activity and social competence	
ability in Thai children with learning disabilities	
4.2.1 Section 1: Translating SCS from English Version to Thai Version and pilot use study	96
4.2.2 Section 2: The study of Intra-rater reliability of SCS: Thai Version	98
4.2.3 Study the relationship between information processing	99
strategy and social competence ability	
Phase Three: The effect of the combination of the PRPP of	104
intervention and the 4 QM on information processing	
strategies application during the Academic activity in Thai	
children with learning disabilities	
	 intervention and the 4QM of facilitated learning on information processing strategies application during the Academic activity in Thai children with learning disabilities Results Phase One: Exploratory study of information processing strategy application on Academic and Play activities identified by the PRPP System: Thai Version in Thai children with learning disabilities 4.1.1 Research Question 1 4.1.2 Demographic characteristics 4.1.3 Level of Task Mastery 4.1.4 Master of errors impacting on performance 4.1.5 Research Question 2 Phase Two: Relationship between information processing strategy during the Academic activity and social competence ability in Thai children with learning disabilities 4.2.1 Section 1: Translating SCS from English Version to Thai Version and pilot use study 4.2.2 Section 2: The study of Intra-rater reliability of SCS: Thai Version 4.2.3 Study the relationship between information processing strategy and social competence ability Phase Three: The effect of the combination of the PRPP of intervention and the 4 QM on information processing strategies application during the Academic activity in Thai

	4.3.1 Research question 4	104
	4.3.2 Demographic Characters of the sample	105
	4.3.3 The comparison of each Quadrant and Subquadrant of	105
	PRPP System: Thai Version scores (Stage Two	
	Analysis) between the Control group and Experimental	
	at Baseline	
	4.3.4 The comparison of PRPP System: Thai Version scores	107
	(Stage Two Analysis) between Baseline and Posttest in	
	the Control and Experimental groups	
	4.3.5 The comparison of each Quadrant and Subquadrant of	108
	PRPP System: Thai Version scores (Stage Two	
	Analysis) between the Control group and Experimental	
	at Posttest	
Chapter 5	Discussion	111
5.1	Phase One: Exploratory study of information processing	111
	strategy application on Academic and Play activities	
	identified by the PRPP System: Thai Version in Thai	
	children with learning disabilities	
	5.1.1 Point 1: Level of Task Mastery	111
0	5.1.2 Point 2: Information processing strategies application	115
A	ll _{error} sights reserved	
5.2	Phase Two: Relationship between information processing	126
	strategy during the Academic activity and social competence	
	ability in Thai children with learning disabilities	
5.3	Phase Three: The effect of the combination of the PRPP of	132
	intervention and the 4QM of facilitated learning on	
	information processing strategies application during the	
	Academic activity in Thai children with learning disabilities	

5.4	Research Limitations and recommendations for future	134
	research	
5.5	Conclusion	135
References		137
Appendix	ANEL 26	165
	Appendix A PRPP System: Thai Version	166
	Appendix B Social Competence Scale	170
	Appendix C List of the Participant's School	175
	Appendix D List of the Translators in Phase Two Study	176
	Appendix E The Examples of Assessment Activities for	177
	PRPP System: Thai Version	
Curriculun	n Vitae	179

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved

LIST OF TABLES

Table 2.1	Summary of instruments focusing on information processing	24
	strategy	
Table 2.2	Summary of instruments focusing on social competence	41
Table 3.1	List of assessment activities	58
Table 3.2	PRPP Core Intervention Strategies	66
Table 3.3	The example of using the combination of the PRPP of	67
	intervention and the 4QM approach for academic activity	
Table 4.1	Demographic characteristics of the sample group (Phase1 study)	72
Table 4.2	Stage One Mastery percentages by level of each task assessment	73
Table 4.3	Stage One error percentages of all activities by error type	76
Table 4.4	PRPP Stage Two Quadrant percentage scores of reading	78
	comprehension and written expression activity	
Table 4.5	PRPP Stage Two Subquadrant percentage scores of reading	79
	comprehension and written expression activity	
Table 4.6	PRPP Stage Two 'descriptor' percentage scores of reading	81
	comprehension and written expression activity	
Table 4.7	PRPP Stage Two Quadrant percentage scores of cognitive game	82
Table 4.8	PRPP Stage Two Subquadrant percentage scores of cognitive	83
C	cgame ight [©] by Chiang Mai University	
Table 4.9	PRPP Stage Two 'descriptor' percentages of cognitive game	85
Table 4.10	PRPP Stage Two Quadrant percentage scores of movement	86
	activity	
Table 4.11	PRPP Stage Two Subquadrant percentage scores of movement	87
	activity	

LIST OF TABLES (continued)

Table 4.12	PRPP Stage Two 'descriptor' percentages of movement	89
	activities	
Table 4.13	PRPP Stage Two Quadrant percentage scores of competitive	90
	play	
Table 4.14	PRPP Stage Two Subquadrant percentage scores of competitive	91
	play	
Table 4.15	PRPP Stage Two 'descriptor' percentages of competitive play	93
Table 4.16	Pearson's moment product correlation of SCS: Thai Version for	98
	test-retest reliability	
Table 4.17	Demographic characteristics of the children in the sample group (Phase2 study)	99
Table 1 19	Demographic characteristics of teachers in the sample group	100
Table 4.18		
Table 4.19	PRPP Stage Two Quadrant percentage scores of Academic	100
	activity	
Table 4.20	Mean score of Social Competence Scale (Teacher version): Thai	101
	version	
Table 4.21	Pearson's moment product correlation subtests of the SCS: Thai	102
ລ	Version and each quadrant of the PRPP System: Thai Version	
CI.	on academic activity	
Table 4.22	Demographic variables of the control and experimental groups	105
A	(Phase3 study) g h t s reserved	
Table 4.23	The comparison of the PRPP System pre-test scores between the	106
	control and experimental group on the Academic activity	
	(reading comprehension and written expression) using the	
	Mann-Whitney U test	
Table 4.24	The comparison of the PRPP System pre-test and post-test scores	107
	on the Academic activity in the control group and experimental	
	group using the Wilcoxon Signed-Ranks Test	

LIST OF TABLES (continued)

Page

Table 4.25The comparison of the PRPP System post-test scores between108the control and experimental group on the academic activity
(reading comprehension and written expression) using the
Mann-Whitney U test



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved

LIST OF FIGURES

Figure 2.1	Conceptualization of a simplified model of information	14
	processing	
Figure 2.2	Information processing model aligned with associated	18
	cognitive processing strategies	
Figure 2.3	The PRPP Score Sheet indicating Stage One and Stage Two	30
	Analysis	
Figure 2.4	The PRPP System of Task Analysis: conceptual model of	33
	information processing behaviours	
Figure 2.5	The four Quadrant Model of Facilitated learning	37
Figure 3.1	The concept of justification for the assessment activities	57
Figure 3.2	Summary of research methodology of each phase	70
Figure 4.1	Stage One Mastery percentages by level of each task	73
	assessment	
Figure 4.2	The means of PRPP Stage One errors scores	76
Figure 4.3	Information processing during reading comprehension and	80
	written expression activity	
Figure 4.4	Information processing during cognitive game	83
Figure 4.5	Information processing during movement activity	87
Figure 4.6	Information processing during competitive play	91
Figure 4.7	Summary Chart of Finding in Phase One study	95
Figure 4.8	Summary of finding in Phase Two study	103
Figure 4.9	Summary Chart of Finding in Phase Three study	110

ข้อความแห่งการริเริ่ม

- วิทยานิพนธ์นี้ได้นำเสนอการประเมิน เกี่ยวกับการประยุกต์ใช้กลยุทธ์การประมวลผลข้อมูลต่อ การทำกิจกรรมด้านการเรียนและการเล่นในเด็กไทยที่มี โดยใช้ PRPP System: Thai Version นอกจากนี้ยังกล่าวถึงการให้การรักษาโดยการประยุกต์ใช้เทคนิคของ PRPP of intervention ร่วมกับ เทคนิคของ 4 QM of facilitated learning
- 2) เพื่อที่จะเพิ่มประสิทธิภาพของโปรแกรมในการส่งเสริมความสามารถด้าน การประยุกต์ใช้กล ยุทธ์การประมวลผลข้อมูลในเด็กที่มีภาวะความบกพร่องทางการเรียนรู้นั้น ผู้วิจัยได้บูรณาการ ความรู้ทางด้าน Top-Down Approach ขึ้นมาโดยประยุกต์ใช้โปรแกรม PRPP of intervention และ 4 QM of facilitated learning ร่วมกัน ซึ่งนำเสนอไว้ในวิทยานิพนธ์นี้
- งานในวิทยานิพนธ์นี้ไม่เคยถูกนำเสนอในการระดับปริญญา หรืออนุปริญญาของสถาบันอื่นมา ก่อนหน้านี้ และผู้วิจัยเชื่ออย่างที่สุดว่า เนื้อหาในงานวิจัยนี้ ไม่เคยถูกตีพิมพ์หรือเขียนโดยผู้อื่น ยกเว้นในบางเนื้อหาที่มีการอ้างอิงมาจากแหล่งอื่น

THO MAI



STATEMENT OF ORIGINALITY

- (1 This thesis has presented in assessment of 'Information Processing Strategies Application' on the academic and play areas in Thai children with learning disabilities using the PRPP System: Thai Version. Moreover, this thesis states to the Intervention of information processing strategies application by adapting technique of PRPP of intervention together with technique of the 4QM of facilitated learning.
- (2 To enhance quality of the program, on advancement of information processing strategy application in children with learning disabilities, the researcher integrated knowledge field of Top-Down Approach. The approach is applied from putting program PRPP of intervention and the 4 QM of facilitated learning altogether. This new approach is put to present in thesis.
- 3) Information of this thesis has never been submitted for degree or diploma of any institute before. I believe that the contents in this thesis has never been published or written by any other person, excluded some contents that referred to other sources.

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved

LIST OF PUBLICATIONS AND PRESENTATIONS

Parts of the work presented in this thesis have been published and presented in the following forums:

PUBLISHED PAPERS

Juntorn, S., Sripetcharawut, S., Lerslip, S., Munkhetvit, P. (2015). Information processing strategy dysfunctions during the play activities in Thai children with learning disabilities. *Bull Chiang Mai Assoc Med Sci*, *49*(1): 17-35

PAPERS SUBMITTED FOR PUBLICATION

Juntorn, S., Sripetcharawut, S., Munkhetvit, P. The Relationship between Information Processing Strategies Application and Social Competence in Thai Children with Learning Disabilities. *Bull Chiang Mai Assoc Med Sci. (Under review; submitted July 2016).*

Juntorn, S., Sripetcharawut, S., Munkhetvit, P. Effectiveness of Information Processing Strategy Training on Academic Task Performance in Children with Learning Disabilities. *Occupational Therapy International. (Under review; submitted September 2016).*

CONFERENCE PROCEEDINGS

Juntorn, S., Sripetcharawut, S., Lerslip, S., Munkhetvit, P. Evaluation of Information Processing Strategy Application in Thai Children with Learning Disabilities Using the PRPP System of Task Analysis: Thai Version. 14th Annual International Mental Health Conference & 12th Annual Child Mental Health and Psychiatry Conference. Bangkok, Thailand. 2015.