

**MINISTRY OF EDUCATION AND TRAINING
VIETNAM INSTITUTE OF EDUCATIONAL SCIENCES**

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**REMEDIAL TEACHING IN READING
COMPREHENSION FOR BOUNDARY RETARDED
ELEMENTARY SCHOOL STUDENTS IN A
NEUROPSYCHOLOGICAL VIEW**

Scientific branch: **Psychology**

Code: **62 31 04 01**

SUMMARY OF DOCTORAL PSYCHOLOGY DISSERTATION

HA NOI - 2015

INTRODUCTION

1. The reason for choosing topics

In primary schools, using the native tongue fluently in the aspects of listening, speaking, reading and writing is a basic goal of teaching Vietnamese.

Difficulty in reading and reading comprehension is one of the difficulties, hinders the learning of students at the first grade primary.

The World Health Organization has recommended that the boundary retarded child can be taught and learned

Research facility remedial teaching of general knowledge is obtained to determine the mechanisms that cause difficulties, as the basis for teaching to help open up learning opportunities for these students is a new approach, effective in some developed countries in the world.

2. The dissertation's purposes

Based on the determining of the extent and nature of retardation in the brain areas in retarded boundary elementary school students, who has difficulty reading comprehension, this dissertation aims to design the impacts of remedial teaching methods to help these students to overcome difficulties in reading comprehension and may attend up the common education curriculum.

3. The Objectives and Sample

3.1. The objectives

Difficulties in reading comprehension of the boundary retarded elementary school students and the impacts of remedial teaching method on reading comprehension according to the functional offset mechanism among brain areas in a neuropsychological view

3.2. The sample

Class 1 and class 2 elementary schools, including:

- Experimental determination:
- + Step 1: consists of 517 subjects can participate in the screening
- + Step 2: consists of 425 subjects can participate in in-depth diagnosis
- Experimental formation: remedial teaching reading of 8 subjects can join

4. Hypothesis

Difficulties in reading comprehension of the boundary retarded elementary school students happen with different mechanisms depending on the brain areas whose function is retarded.

If the design covering the impacts to offset function on remedial teaching, which are suitable with the mechanism of the reading comprehension disorder in a neuropsychological view, may help boundary retarded elementary school students overcome difficulties in reading abilities to follow up with the common educational program.

5. Research task

5.1. Research on the theoretical basis neuropsychology of remedial teaching in reading comprehension for boundary retarded elementary school students

5.2. Research on the theoretical basis remedial teaching of reading difficulties in boundary retarded elementary school students and design the impact to offset function on remedial teaching in reading comprehension for boundary retarded elementary school students

6. Scope of research

6.1. On the subject research

- Research the difficulty in reading boundary retarded in first grade elementary students (as stipulated by the WHO).

- Research on remedial teaching reading comprehension for students who has retarded function areas brain as designated by the method Luria - 90, in a neuropsychological view

- Experimental for the impact remedial teaching reading comprehension on two groups of students, including students who are retardation in the level III front and rear areas of the brain (according to the results the diagnosis of position by means of Luria - 90).

6.2. Participant and study site

Determinable experiment conducts on students in classes 1, 2 of 12 primary schools in Hanoi and Vinh - Nghe An; Formative experiment studies on students in classes 2 of Hong Son primary school in Vinh City, Nghe An province.

7. Methodology and research methods

7.1. Methodology

- + Approaching from neuropsychological children.
- + Approach interdisciplinary

7.2. Research methods

- Method of researching document, text/ literature review
- Method of experts
- Methods of observation
- Method of talking/conversation
- Method of test
- Method of experimental study
- Method of acting product research
- Method of case study
- Method of Mathematical Statistics

8. Contributions of dissertation

8.1. Contributions on theory

Developping some basic concepts as the foundation for theoretical studies and practicality

Enriching theories of teaching overcoming difficulty in reading at elementary school students: indicating the mechanism of dyslexia and the mechanism the impact to offset function on remedial teaching in reading comprehension for elementary school students boundary retarded in a neuropsychological view

8.2. Contributions on practicality

Have discovered boundary retarded elementary school students groups who has difficult reading comprehension; analysis of expression and mechanisms of each type there; Design the impact to offset function on remedial teaching.

Through experiments, the study has confirmed the feasibility of the impact to offset function on remedial teaching in reading comprehension. The results can be transferred and applied in practical teaching and learning in primary educational system.

9. The structure of dissertation

The thesis consists of 6 parts: Introduction; Content (three chapters); Conclusions and Recommendations; List of published articles; References and Appendices.

CHAPTER 1

THEORETICAL FOUNDATION OF REMEDIAL TEACHING IN READING COMPREHENSION FOR BOUNDARY RETARDED ELEMENTARY SCHOOL STUDENTS

1.1. Literature review

1.1.1. The study of difficult reading and reading comprehension

The history of reading studies can be started from the works in reading and dyslexia by the classic neuroscientists (Dax, 1835; Broca, 1862; Wernicke, 1872) [94].

Many later studies then mentioned the various different aspects of reading. In particular, the pathological aspects of reading is shown in the studies by the end of the nineteenth century – dyslexia (Wernicke, Dejerine, Wolpert, ...). The coming-up studies explained the mechanism and causes leading to difficulty in reading and comprehension under different hypotheses. The causes based on brain function were also mentioned in several studies of the authors such as Galaburda, Shaywitz, Luria, Vo Thi Minh Chi and Tran Trong Thuy

1.1.2. Research focusing on teaching children with difficulties in reading comprehension

The works of Joseph K. Torgesen; Gillingham and Stilman, Young and Tyre, Huynh Van Son, Bui The Hop, Huynh Thanh Truc and Vo Thi Tuyet Mai have studied and introduced strategical teaching model supporting students with reading difficulty based on the different assumptions and aspects of disorder mechanisms. In which, the study of Luria, Xvetcova and Vo Thi Minh Chi suggested the impacts of remedial teaching method for children who have difficulties in reading comprehension under a neuropsychological view.

However, approaching to the brain structure to explore the mechanism of neuropsychology in reading difficulty in order to apply as the basis for the conducting of supportive teaching method in reading and reading comprehension to children is not an interested topic in research.

1.2. Reading comprehension of boundary retarded elementary student

1.2.1. Neuro-psychological theory of high-level psychological functions

- The psychological functions is limited in the area of the brain theory

- The negating the positioning of the psychological functions in the area of the brain theory

- The systematic, flexible focal doctrine theory of high-level psychological functions in the human's cortex

1.2.2. Basis neuropsychological of reading comprehension

1.2.2.1. Reading comprehension concept

Comprehensive reading is a process of intellectual movement to be able to clarify the character, content and purpose of the text notified. Reading comprehension can be understood as the conscious of reading process

1.2.2.2. Reading comprehension in a neuropsychological view

Under the perspective of neuropsychology, reading comprehension is a conscious psychological activity and is a complex system functions. Reading comprehension system function regulate simultaneously in several different regions of the cortex; each region plays a certain role in the reading comprehension and each brain region may be presented in other functional systems.

- The central apparatus of the organ systems analysis technical assurance of reading (reading aloud)

- Ensure the synchronized form of processing more information read: complex brain regions of the rear cortex (the level III areas areas of the brain).

- Ensure that programming, control, control-conscious reading: the level III front of the brain

1.2.3. Boundary retarded elementary students

- Intelligence index is at boundary between normal development and mental retardation (ranging from 70 to 85)

- Boundary retarded children are diagnosed in terms of retarding in one or several regions in the cortex function, in comprehending and absorbing knowledge.

- Boundary retarded children can learn a common educational program if they were detected and supported timely. In addition, the educational program is consistent with the current development level of them.

1.2.4. Reading comprehension for boundary retarded elementary school students in the neuropsychological view

The retardation in one or several function areas in the cortex in comparison with the age limitation of boundary retarded children is the causes of the obstacles to comprehensive reading. Reading difficulty in boundary retarded elementary school students illustrates in many different manifestations depending on the brain area whose function is retarded. The research results have mentioned the types of expression of difficult reading comprehension in students with retarded brain function areas, including:

*** Reading comprehension difficulty is not related to retarded language**

- ① difficulty in reading comprehension due to retardation perception - space
- ② difficulty in reading comprehension due to retardation in level III rear areas of the brain

*** Difficulty reading involves language retardation**

- ① difficulty in reading comprehension due to language feeling disorder
- ② difficulty in reading comprehension due to memory - sound language disorder
- ③ difficulty in reading comprehension due to memory - sight language disorder
- ④ difficulty in reading comprehension due to semantic language disorder
- ⑤ difficulty in reading comprehension due to move language disorder
- ⑥ difficulty in reading comprehension due to aphasia afferent motor disorder
- ⑦ difficulty in reading due to aphasia centrifugal motor disorder

1.3. Basis neuropsychological of remedial teaching reading comprehension for boundary retarded elementary school students

1.3.1. Remedial teaching

Remedial teaching is a teaching process conducted in subjects having retarded brain areas compared with an age limit - the boundary retarded children. It was carried out based on the principles of compensatory brain function in a system to help them achieve normal development within limits.

1.3.2. Theories related to remedial teaching to boundary retarded elementary school students

The modern doctrine theory indicates that the lesion or retardation of each stage of the system function will be offset by active control of the stages within the same system or under another system. Here is also the scientific foundation of the remedial teaching for the cases who are in disorder condition of psychological functions.

Based on the principles of compensatory function in brain activities, remedial teaching is also the teaching process can fully rely on the achievements and legacy of psychology, which must mention the theory of LX Vugotxki, A.N. Leonchep, P.Ia.Galperin, Howard Gardner, Ho Ngoc Dai and VVDavudov.

1.3.3. Remedial teaching in reading comprehension for boundary retarded elementary school students in the neuropsychological view

The process of remedial teaching in reading comprehension for boundary retarded elementary school students in a neuropsychological view is deployed step by step:

Step 1. Identify the subject of remedial teaching - boundary retarded elementary school students and the mechanism causing reading difficulty in the neuropsychological view

- Screened diagnosing:

Students participating in the study are required to conduct Gille tests. Results of Gille tests allows to screen students with cognitive problems (IQ at boundary retarded).

- Classified diagnosing and intensive diagnosing

Result test allows to determine retarded position of the function and analyze the mechanisms causing comprehensive reading difficulty. Based on the focal doctrine regions can be classified the different types of boundary retard and excluded boundary retarded cases unrelated to reading.

Step 2. Conduct remedial teaching method

- Checking the input of students to learn the practical difficulties of reading comprehension that students encounter boundary retardation

- Establishing a compensatory mechanism: Design a system of compensatory functional exercises for reading comprehension based on reading disorders identified

- Conducting remedial teaching

Step 3. Evaluate results after applying remedial teaching method

The evaluation was conducted in the following areas:

- Evaluate the improvement of students' reading comprehension abilities after remedial teaching by using selected exercises and designed current curriculums.
- Review the results of the study and exam scores.
- Evaluate the changes in students' personality based on information obtained from observation, conversation and product analysis

1.3.4. Factors affecting remedial teaching reading comprehension for boundary retarded elementary school students

1.3.4.1. To the student

- Characteristics syndrome of the boundary retarded types and reading comprehension in students.
- The level of current development of boundary retarded student.
- The attitude, interest in learning and other factors in student psychology.

1.3.4.2. About the school

- The phenomenon of "ramification" of in secondary schools students
- The supportive policies, programs and training from the teacher for student who are difficulty in reading comprehension.

1.3.4.3. To the teacher

- Teacher's perceptions and attitudes about boundary retarded status in student.
- Ability to understand the student status
- Other personality qualities of the teacher.

1.3.4.4. To the parents

- The awareness of parents about the natural reality condition of in their children
- The cooperation of the parents with the programs and plans remedial teaching method

CHAPTER 2

ORGANIZATION AND METHODOLOGY

2.1. Theoretical research 2

1.1. Purpose: Determine the theoretical basis for the research project.

2.1.2. Tasks: Build a theoretical framework for the study of dyslexia and neuropsychological basis of remedial teaching for boundary retarded elementary school students.

2.1.3. Contents:

- Overview of the research problem
- Formalize some relevant theoretical issues , analyze and clarify the issues and the conceptual tools of the thesis

2.1.4. Research methods and how to proceed

- Using the method of analysis, synthesis, systematization and generalization on the studies.
- Expert method that adds to the design, selection of impact exercises, assignments input, output measurements and assessments for students scoring.

2.2. Practical research

2.2.1. Purpose

Find out the mechanism of reading comprehension disorder, determine, design and test the impact on remedial teaching to help students overcome the reading difficulty.

2.2.2. Tasks

- Accomplish with the screening and in-depth diagnostics to determine the mechanism causing reading comprehension disorder in boundary retarded student.
- Analyze the neuropsychological syndrome in each types of boundary retarded students who has difficulty reading. Thus, design the impacts to the functional offset appropriate for the disorder mechanism of each type in a neuropsychological view
- Experiment remedial teaching , analyze and assess the impact of it on the progress of reading abilities of students participating in the experiment

2.2.3. Contents

- Accomplish with classifying types of reading comprehension disorder in boundary retarded elementary school students based on the mechanisms of retarded functional brain areas and analyze the psychological syndromes of each type

- Identify appropriate offset mechanism for each type of reading comprehension disorder in boundary retarded students
- Organize remedial teaching on several type to review the availability of the impact for boundary retarded elementary school students

2.2.4. Research methods and how to proceed

Along with purposes and tasks of the practical research, the thesis coordinates empirical method (basic method) with other research methods, such as methods of observation, interviewing, specialization, operational products research and case study

2.3. Determination of experimental organization

2.3.1. Purpose: Discover boundary retarded elementary school students; explore the retarded mechanisms and the relevance of them to reading comprehension abilities.

2.3.2. Tasks

- Accomplish with screening to discovery boundary retarded students using Gille test.
- Accomplish with in-depth diagnostic to determine the mechanism causing reading comprehension disorder using Luria – 90 test.

2.3.3. Contents

- Assess the level of intellectual development of children to determine boundary retarded elementary school students
- Define the brain areas which functional retarded in boundary retarded elementary school students and classify them based on the brain areas
- Analyze neuropsychological syndromes to clarify the expression of dyslexia in types of boundary retarded

2.3.4. Research methods and how to proceed

The primary method used is the method of multiple-choice.

Experimental determination are conducted through two steps:

Step 1 - Screening and discovering boundary retarded elementary school students

Tools : Gille test

Step 2 - In-depth diagnostics

Tools: Luria – 90 test

2.4. Formalization of experimental organization

2.4.1. Purpose: Testing the scientific hypotheses of the thesis

2.4.2. Tasks

- + Analyze neuropsychological syndromes and design the compensation functions appropriate for the mechanism of each type in a neuropsychological view.
- + Select exercise system and design the offset to impact program on remedial teaching reading comprehension
- + Analyze and assess the outcomes of remedial teaching against the progress in reading abilities of students participating in the experiment.

2.4.3. Experimental Content

- + Determine the appropriate offset mechanism for each type of reading comprehension disorder in boundary retarded students. Select and plan corresponding exercises considering the impact which has been designed for each group of boundary retarded students.
- + Organize remedial teaching to review the progress of students under the influence of the impact on remedial teaching reading comprehension which has been designed

2.4.4. Methods and how to proceed:

To accomplish the experimental content above, we have used empirical methods (empirically established).

Experimental steps taken:

- ① experimental input – identify the mechanism causing reading comprehension disorder
- ② Conduct experimental impacts
- ③ Review experimental results

2.5. Ways of analyzing the data and criteria for screening and diagnosis

2.5.1. Analyze the data:

2.5.1.1. Gille test

Results of the Gille test exercises will be graded according to the test mark schemes. From the raw points to IQ points, applying the IQ formula by American psychologist David Wechsler:

$$IQ = \frac{X - \bar{X}}{SD} \times 15 + 100$$

2.5.1.2. *Luria – 90 test*

Results of Luria -90 test will be analyzed according to 14 parameters of the memory (including lingual memory, visual memory and auditory memory). The scores are calculated by EGXimernhixtcaia drafting system. In the calculation of Luria – 90 test scores, every one mistake in the steps is one score correspondingly. Thus, the scoring system means "punishment". Total scores of auditory and lingual memory is recorded as $\sum s$, total scores of visual memory is recorded as $\sum z$, total test score is recorded as $\sum 0$. Total score achieved reflects the disorder level in children.

2.5.2. *Criteria for screening and diagnosis*

2.5.2.1. *Criteria for screening boundary retarded students*

Classified by David Wechsler:

- The level of normal intellectual development is $IQ = 100 \pm 15$;
- The level of mental retardation is an $IQ \leq 70$.

Boundary retarded student are selected by an IQ of $70 \leq IQ \leq 80$ (state boundary retarded).

2.5.2.2. *Criteria for diagnostic criteria for the brain areas which function retarded*

By clinical examination of test Luria - 90, according to the research on children of author EGXimernhixtcaia [93], may determine the brain areas whose function is retarded related to reading abilities as below:

- The retardation in temporal lobe - the area 22 is exposed by the lingual disorder while recreating auditory traces
- The retardation in temporal lobe - an area 21: the errors reflect the narrowing of lingual and auditory memory
- The retardation in level III front areas of the brain: the errors appeared often reflect behavioral disorders with following expressions : high levels of distraction, slow memory processes and lingual disorders in memorizing and auditory tracing.
- The retardation in level III rear areas of the brain: reflect through the reverse of physical recreation and inability of determining coordinate system in space.

2.5.2.3. *Review experimental results*

Aspects evaluated:

- Results and work processes,
- Period scores and learning outcomes,
- Changes in personality of students

CHAPTER 3

EXPERIMENTAL REMEDIAL TEACHING IN READING COMPREHENSION FOR BOUNDARY RETARDED ELEMENTARY SCHOOL STUDENTS

3.1. Determined experiment: Screening and diagnosing boundary retarded elementary school students with difficulties in reading comprehension

3.1.1. Results of screening to find boundary retarded elementary school students

Table 3.1. Results of screening students based on IQ

o.n	Criteria <i>i</i>		<i>IQ</i> > 85		<i>70</i> ≤ <i>IQ</i> ≤ 85		<i>IQ</i> < 70	
			quantity	%	quantity	%	quantity quantity	%
1	localition	Ha Noi n =104	11	10,5	88	84,6	5	4,8
		Vinh n = 413	54	13,4	337	83,8	22	2,8
2	Sex	Male = 278	35	12,6	227	81,6	16	5,8
		Female = 239	30	12,6	198	82,8	11	4,6
3	Grade	Grade 1 n = 262	27	10,3	223	85,1	12	4,6
		Grade 2 n = 255	38	14,9	202	79,2	15	5,9
Sum			65	12,5	425	82,3	27	5,2

The distribution of the results in table 3.1. shows that boundary retarded elementary school students account for 2% of poor students. Therefore, boundary retardation is one of the fundamental reasons causing difficulties in learning for students.

3.1.2. Results of the diagnosing the retarded areas in boundary retarded elementary school students with difficulties in reading comprehension

Table 3.2. Results of classification in boundary retarded students according to the retarded areas

<i>No.</i>	<i>Location of retarded brain lobes</i>	<i>Qt</i>	<i>%</i>
1	The retardation in temporal lobe - an area 22	23	6,6
2	The retardation in temporal lobe - an area 21	28	5,4
3	The retardation in level III front areas of the brain - an area 10	176	41,4
4	The retardation in level III rear areas of the brain - an area 39	22	5,2
5	The retardation in other brain lobes	176	41,4
Sum		425	100

3.1.2.1. Expressions of reading comprehension difficulty in student who has retardation in temporal lobe - an area 22 (according to the scheme of Brodman)

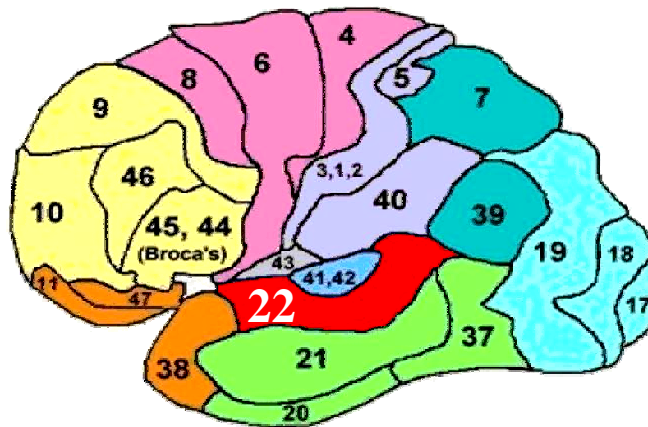


Image 3.1. Retarded at temporal lobe - an area 22
(according to the scheme of Brodman)

Difficulties in reading comprehension caused by retarded functions in temporal lobe - an area 22, are secondary difficulty, caused by feeling language disturbances.

Diagnosed and found out by Luria - 90 test, boundary retarded elementary school students with difficulties in reading under this form express phonemic disorders. This is typical disorder in cases of feeling language disorders [7].

Phonemic hearing disorders is the basis of deficiencies in distinguishing sounds - language caused by feeling language disorders and a cause of difficulties in reading comprehension of those boundary retarded students.

3.1.2.2. Expressions of reading comprehension difficulty in students who has retardation in temporal lobe - an area 21 (according to the scheme of Brodman)

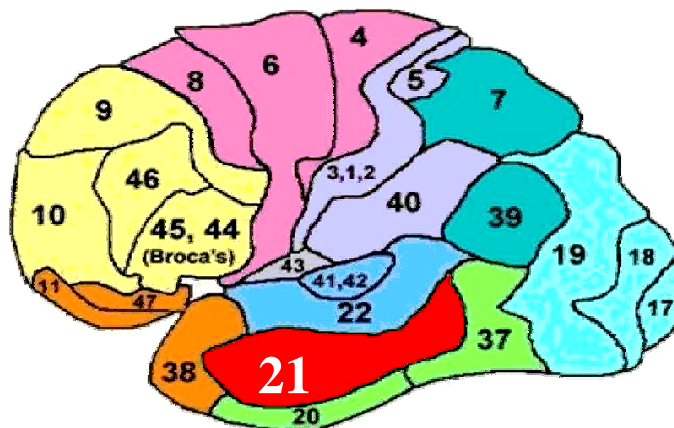


Image 3.2. The retarded in temporal lobe - an area 21
(according to Brodman)

Difficulties in reading comprehension caused by retarded functions in temporal lobe students - an area 21 is determined to be associated directly with memory - sound language disorders.

Table 3.3. Results of keeping in mind and reappearing sound - language section

number of words /group	Time 1			Time 2			Time 3			Time 4			Time 5		
	H1	Π 1	Π 2	H2	Π 1	Π 2	H3	Π 1	Π 2	H4	Π 1	Π 2	H5	Π 1	Π 2
2	2	1		3	1		3	2		3	2		3	2	2
groups (3words /group)	3	1		3	1		3	1		3	2		3	3	3
5 words group	1.7	2		2.1	2.5		2.2	2.4		2.4	2.5		2.9	3.2	3.2

H: directly reappearing Π: repeat reappearing

Results of implementing "Luria - 90" test in this students group shows:

- The shrinking of the memo volume (see Table 3.3)
- Strengthening inhibition of the auditory trace and reducing durability of the sound - memory language stimulation in the direct and indirectly memorising condition with the interference of the same type

Therefore, the difficulties in reading comprehension of these students is the result of memory sound - language disorder.

3.1.2.3. Expressions of reading comprehension difficulty in students who has retardation in level III the front of the brain - an area 10 (according to the scheme of Brodman)

The neurological psychological symptoms found out in retarded the level III front areas of the brain students reflects reading comprehension as an activity disordered.

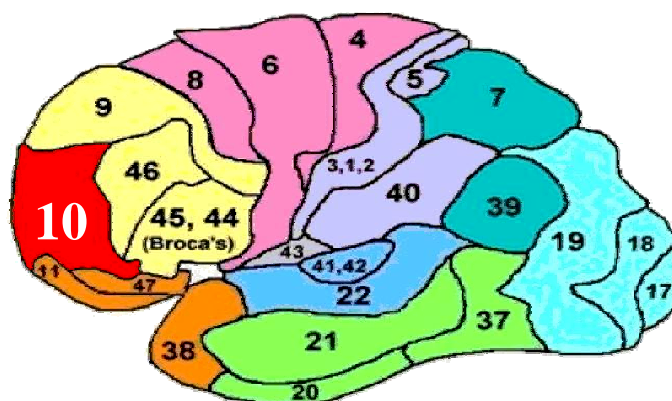


Image 3.3. The retardation in level III front of the brain - an area 10 (according to the scheme of Brodman)

"Luria - 90" test result of those boundary retarded students reflects the issues relating to programming, testing, adjusting and controlling memorizing processes for both the visual and the hearing feeling.

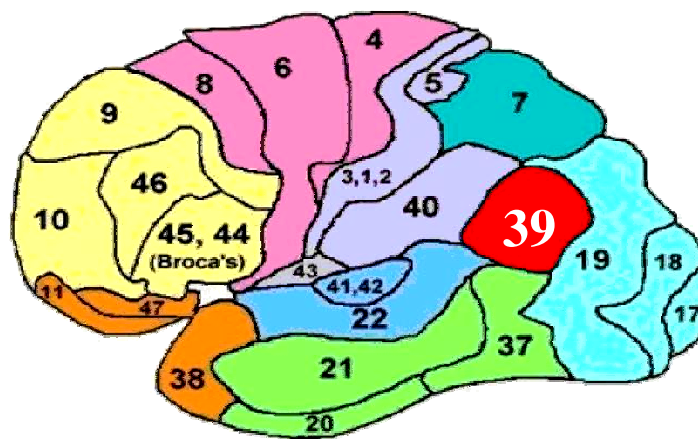
"Luria - 90" test result shows that they do not make the memorizing action program and it does not run with by consciousness:

- Appearing semantic language disorders while reappearing
- Disappearing the systematic characteristic in action

Ability to move is less flexible

In the process of reading in students who has retardation in the level III front areas of the brain students, the real impact by the behavioral disorders are shown: Students read in distracting attention. Distributed attention level is high, the children make a lot of errors in reading because distracting from the lessons resulting to not understand what they have read.

3.1.2.4 Expressions of reading comprehension difficulty in student who has retardation in level III the rear of the brain - an area 39 (according to the scheme of Brodman)



***Image 3.4. The retarded in level III rear of the brain - an area 39
(according to the scheme of Brodman)***

Results of memorising the visual by "Luria - 90" test in this group of students showed expressions of inability in spatial orientation, difficulty in analyzing spatial contours; not writing and drawing as the examples and expressions reverses direction when reappear

- In these boundary retarded students, constraints in reading are not only in recognizing letters, but also in reading words. They have difficulties in processing the

content and structure of information received, difficulties in gathering separate elements into an unified structure.

- It is difficult when they have to absorb information in the grammatical structure, particularly with complex structures. Accordingly, the ability to acquire knowledge in general will be very limited.

3.2. Formative experiment: remedial teaching in reading comprehension for boundary retarded elementary school students

3.2.1. Designing impacts on remedial teaching reading comprehension for boundary retarded elementary school students in a view of neuropsychology

3.2.1.1. Basis for designing impacts on remedial teaching reading comprehension for boundary retarded elementary school students

- Based on accurate neuropsychological examination results to design impacts on remedial teaching reading comprehension for student comprehension boundary retarded remedial teaching.

- Following - up popular programs.

- Considering to the conditions of time, living and learning style as well as the conditions of facilities ... so that the impacts shall be feasible and effective.

3.2.1.2. The impacts on remedial teaching reading comprehension for retarded level III front of the brain student - an area 10 (according to the scheme of Brodman)

* General principles:

- Conducting to teach a programmizationching is essential for student who has retardation in level III front of the brain. The programs with the order of operations are classified in specific purposes depending on the nature and extent of individual retarded "case".

- Actions under the program is a "backwards" step on children's cognitive, considering the child's ability as the potential to, on that basis, offset the functional shortage to develop their cognition including improvement in reading comprehension.

- Use a variety of tools of materializing function in some intellectual activity steps in the program, focusing on transforming the intellectual activities from

"outside" to "inside; from the step of materializing intellectual activities to the step of "inside" actions with words. Until they show the fluency of activities, the program content will be reduced gradually and slowly remove the support tools.

** Purpose*

The impacts on remedial teaching reading comprehension for retarded level III front of the brain student is to help them to change their reading from without sense to a conscious level; replacing their weak step corresponding to retarded areas structure with a program of operations and the order to implement them.

3.2.1.3. The impacts on remedial teaching reading comprehension for retarded level III rear of the brain student - an area 39 (according to the scheme of Brodman)

** General principles:*

- It has been identified that the retarded level III rear of the brain student have the conservation of specific functions such as visual, auditory, tactile and moving sensory. Under the principle of "balancing" function in brain activity, the brain region responsible for this function is regarded as the advantages to compensate for retarded brain regions in children. The impacts on remedial teaching reading is to help exploiting the potential area to promote the development of the children.

- Remedial teaching in reading comprehension can use diversely and flexibly impacting methods based on disorder mechanic on each case, but it should focus on principles given that are out of the sentence structures to help students implementing activities with materials or materialization to change gradually into inside activities. On the basis of understanding the structure of sentence parts, the students can write sentences to express the content.

- The program of remedial teaching in reading comprehension should be developed in a continuous systematic way and consistent with expression of each child. However, any interference in remedial teaching must be associated with the formation of the purpose that is necessary for the child.

- It's determined that reading and understanding in remedial teaching method is only temporary, until a certain stage, when the student can control by themselves in reading by the method, they need to be supported to normalize gradually in reading and understanding by moving out the supporting tools.

* Purpose

Remedial teaching for retarded level III rear of the brain students is to help them to overcome the limitations in arranging the simultaneous works. For that purpose, the impacts designed must mobilize functions developed within normal limits (such as visual, feeling - moving) to compensate. The retarded level III rear of the brain student can perceive the information in the forms of individual, specific, sensible intuition, this can be considered as present ability ("present development area") to dominate "the nearest development area".

3.2.2. *The typical study case*

Remedial teaching experimental results are described in four study cases of two groups of elementary school students: retarded the level III front areas of the brain students group and retarded the level III rear areas of the brain students group. Each case is described starting from screening step to the ending of remedial teaching with an analysis of the changes under the impacts remedial teaching.

Portrait of retarded elementary school students and the remedial teaching process:

- General information about the student and family circumstances
- Clinical photo
- Psychological photo
- Neuropsychological photo
- Checking inputs before proceeding with remedial teaching
- Remedial teaching process and some of the results achieved

The results of the remedial teaching for the study case reflect that students have certain changes in the ability to perceive general knowledge including improvement in reading comprehension under the impacts of remedial teaching. The important thing here is that it's not only to improve the score, but also basically they did know how to "settle" work according to their abilities, especially they are no longer afraid of learning and gradually like to learn and know "how" to learn.

This result makes sure that the student's personal characteristics such as self-confidence and adjustment to classroom activities are consolidated, forming the basis for the development of the students.

3.3. The conditions of remedial teaching for retarded boundary elementary school students

3.3.1. On the side of the students

- The students must have a motive, interests in learning
- The students must form a sense of purpose, plan in all areas of activity by themselves.

3.3.2. On the side of the school and teachers

- Schools and teachers must be aware of the nature of the phenomenon on difficulties in learning of the students;
- Schools and teachers must have policies and plans to intervene and support poor students;
- The conditions on the personality of the remedial teaching teacher

3.3.3. On the side of the parents

- The parents must be aware of their children's specific nature of learning difficulties;
- The parents must coordinate closely and usually with the teachers and schools

CONCLUSIONS AND RECOMMENDATIONS

1. Conclusion

Through theoretical research on remedial teaching in reading for boundary retarded elementary school students, we found:

1.1. Retarded function areas in the brain is the most fundamental causing difficulties for students in acquiring knowledge. However, unlike the oligophrenia, boundary retarded elementary school students less develop only one or several brain areas compared with the age, so balancing functions of brain areas in children can fully take place. This is the basis for remedial teaching in reading comprehension for boundary retarded elementary school students.

1.2. Difficulties in reading in boundary retarded elementary school students take place under different mechanisms depending on the retarded functional areas of the brain. This requires the need of conducting psychological diagnostics to map neural mechanisms of difficulty in the child prior to remedial teaching, accordingly on offsetting (balancing) impacts in remedial teaching in reading comprehensive consistent with its level and nature.

Through practical research on remedial teaching in reading comprehension for boundary retarded elementary school students, we found:

1.3. Remedial teaching in reading with functional offsetting impact methods for the brain areas whose function is retarded, is feasible teaching form and reach practical effectiveness.

- In terms of education: Remedial teaching in reading not only improves reading ability in boundary retarded children but also contributes to raising the awareness of students, to help them keep up common programs. The remedial teaching cases proved experimentally proved that.

- In terms of society: remedial teaching in reading has contributed actively to overcome the shortcomings in the school learning. The improvement in reading and progress in academic performance helped them feel more confident, more open in relationships with friends and teachers, more easily in integration.

1.4. Time, schedule and rhythm and impact method in the remedial teaching in is differ from one by one because they have different disorder mechanisms. However, it can be confirmed that the remedial teaching is performed as soon as possible due to it results to shorter time for remedy and earlier effectiveness.

Actually conducting remedial teaching shows that the form of "mainstreaming" (gathering boundary retarded students of different types in the same grade into one class in a training session) is appropriate and feasible. By encouraging and assigning tasks, a positive interaction can be mobilized between students which create the offsetting between them while they work together in solving learning tasks.

1.5. In remedial teaching in reading comprehension, designing and organizing lessons on the principles of programization is essential and suitable perfectly for boundary retarded students in any mechanism. Teaching programization not only helps the children more easily in solving learning tasks and strengthen inspection and control for the process of work, but also has great significance in terms of psychology.

In the program of the action in the order, though each step must be practiced repeatedly in long time, the teachers need to pay attention and work together the students in the next step to solve lessons fully, the students know how to present the forms, order of programming and sports action settlement of homework tasks.

1.6. Experiment remedial teaching in reading was done on the cases of boundary retarded elementary students. These cases showed significant improvement in reading comprehension in students under the impacts of the remedial teaching, however, the improvement levels was not the same in the children. Pedagogical observations during the experiment showed that the impact forms are designed for the types of disorders related to reading comprehension relative well response with the corresponding disorder which have been identified. Results of experimental remedial teaching in reading comprehension for the study cases allows to confirm that boundary retarded children with difficulties in reading can learn if it is found out early and appropriately taught with their qualifications.

The results of the theoretical and empirical study show that the hypothesis of the dissertation have been proven, the research has been completed.

2. Recommendations

2.1. For teachers

- Teachers need to understand and pay special attention to boundary retarded students not only on cognition but also other psychological characteristics, from which appropriate behavior and the necessary support should be provide to help them overcome difficulties in learning generally and in reading particularly.

- In teaching and behavior with the boundary retarded children, it is necessary to pay attention to find out and realize their abilities, potential development; to develop their individual characteristics, such as excitement, capacity, tendency, emotion, inclination, relationship, passion; creating a favourable psychological atmosphere for the development of children ...

- In addition to continuous improvement in professional knowledge, the teachers need to practice themselves to overcome the unwanted emotional state in teaching and interacting with the learning "problematic" students (as obtuseness, distraction, speaking and forget later, and other expressions of behavioral disorders ...).

2.2. For parents

- Need to equip themselves with the necessary knowledge about the their children's learning difficulty phenomenon in detail. So that they can take care and help their children in learning and spiritual encouragement to help children overcome the psychological difficulties to continue learning with friends in their own age.

- Work closely with the teachers to have a consensus on the plan as well as ensuring the necessary principle of remedial teaching as they guide the children to learn at home.

- On the basis of understanding, it is necessary to have appropriate patient actions, solutions, long-term plan to help children and avoid impatient, stage omission and make pressure on the children.

2.3. For school

- Facing with difficulties in learning generally and in reading comprehension particularly of boundary retarded students, there should be common scientific explanation to realize true nature and accept it as an objective reality in schools. Instead of look them as "underground", put in the list of poor students, not considered

in school competition, please ask to help them to overcome difficulties in learning as recommended by Health Organisation the world.

- There should be a regular plan and program, specifically to cooperate with school psychologists to timely evaluate, screen and remedy in teaching to help boundary retarded students to have opportunities to keep up with their classmates.

2.4. For education management agencies

- Need to reduce the pressure of achievement in school to be able to recognize more substantive assessment of the quality of teaching, and on that basis to create learning opportunities for boundary retarded students

- Need to have the role of the school psychologist among school staffs to find out , interven early and usually in boundary retarded disorders in students as well as other psychiatric disorders . In the other side, find the way to put this content into the school's activities a program.

- The results of the research can be referenced and developed for practical application in schools.

**LIST OF PUBLISHED ARTICLES RELATED
TO THE DISSERTATION TOPIC**

1. Le Thuc Anh (2013), *"Reading activities understanding from the neuro psychological views"*, Journal of Educational, Special Issue, May 6/2013.
2. Le Thuc Anh (2014), " *From the approach of neurological psychology, learning causes leading to difficulties in reading and undestanding abilities*", Journal of Educational Science, No. 103, May 4/2014.
3. Le Thuc Anh (2014), *"Detecting students who have learning difficulties in reading and understanding using the specific method of neurological psychology"*, Workshop portfolio of the National Scientific Conference "Mental Health in Schools", May 6/2014, Dong Nai, National university Ho Chi Minh Publishing
4. Le Thuc Anh (2014), *"Some methods based on neurological psychology impact on the remediall teaching methods in the ability of reading and understanding for students who are retarded frontal function, "* Journal of Educational Science, No. 111, February 12/2014.

Scientific work was completed at:
Vietnam Institute of Educational Sciences

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Can find out the thesis in:

- National Library
- Library of the Vietnam Institute of Educational Sciences