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**DEVELOPMENT OF SOME ELEMENTS OF
CREATIVE THINKING FOR ELEMENTARY SCHOOL
STUDENTS**

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INTRODUCTION

1. Reasons for choosing the topic

Creative thinking - the highest level of human intellectual activity, is of extraordinary importance for the development of human civilization. So it is always a desirable personality attributes of society and is considered a global educational purposes. Therefore, creative thinking not only attract the attention of psychologists, but also for teaching science, by deep relationships with its academic activities of students in the school.

In Vietnam, according to Education Law 2005 (Article 28), parallel to the teaching of knowledge, development of creative thinking is seen as an important target in human education, "Teach children not only information but also teach thinking skills to help children use the best information "[16, tr9].

From the 50s of XX century, the world has many research works focus on creative issues as: the basic standards of creative activities; the difference between creativity and innovation; nature of creative activity; personality attributes of creativity; development of innovative capacity, stimulate creativity, ... of many great authors like J.P. Guilford (1950, 1956, 1967a, 1967b, 1970), Barron (1955, 1952, 1981, 1995), Getzels JW (1962, 1975), Jackson (PW Getzels JW & Jackson, 1962), Torrance (1962, 1963, 1965, 1975, ...).

In the country, there are many studies about creative thinking of great authors such as Royal We (1964), Nguyen Canh Toan (2003, 2004), Nguyen Huy Tu (1996, 2006, ..), Germany, Norway (1999), Pham Van Hoan (1969), Phan Dung (1992, 1994, 2002 ...), Ton Than (1995, 1996), Tran Luan (1996), Pham Thanh Nghi (1993, 2011), ... The research has contributed somewhat to solve the practical demands of teaching. However, these studies focus on the high school level as junior high, high school, ...

In short: Educate the younger generation have creative personality is one of the primary task of education, including primary education. This is reflected in the purpose of all activities of the school, particularly the organization of learning activities towards the formation and development in pupils qualities of a creative personality. Currently, although there have been studies on thinking, creative thinking and training, development creative thinking for students, but usually at higher levels as Secondary School, Middle School, associated with a particular subject and usually for good and excellent students. At primary level, the researchs on creative thinking focuses on the design exercises or just sticking with a theme, a narrow range of knowledge in a subject. Our thesis continues to go deeper into the matter has not been much interest: development of a number of factors of creative thinking for elementary school students, with the notion that factors such as flexibility, flexible, maturity, sensitivity, critical, uniqueness, detail, ... can develop right from primary level through the course. Also, it can be seen that the development factors of creative thinking for all students (including medium students) by creating a class that encourages thinking of students as well as the application of specific measures under the ways and to varying degrees to suit each student populations. That is the purpose of this thesis research.

2. Purposes of the research

Proposed measures of teaching organization to develop some elements of creative thinking for elementary school students.

3. Objects and subject research

3.1. *Object research: Primary teaching process.*

3.2. *Subject research:* Measures to develop some elements of creative thinking for students in elementary teaching.

4. Scope and limitation of research

The theme focuses on the study:

- The Issues of creative thinking and creative thinking of students in the last grade of primary school.
- The problem of teaching thinking - the basis for the development of a number of elements of creative thinking for elementary students.
- Building measures to develop some elements of creative thinking in teaching students in the last grade of primary school.
- Experimental measures in teaching Mathematics, Vietnamese, Nature - Society in grades 4 and 5.

5. Scientific assumption

All students are normally capable of creative thinking at different levels. So can develop some elements of creative thinking for elementary school students on the basis of creating a classroom environment that fosters thinking combined with measures appropriate for teaching thinking.

6. Tasks of the research

- Determine the theoretical basis of the development creative thinking for elementary students.
- Assess the situation development of teaching creative thinking for students in elementary school today.
- Propose measures to develop some elements of creative thinking for students in elementary teaching.
- Experimental pedagogy.

7. Viewpoints offer protection

- The elements of creative thinking are not only in good and excellent students. Each student will normally be able to develop the qualities of creative thinking on the different levels. So some factors of creative thinking as independent, flexible, sensitive, critical, flexible, mature, unique, details can form and grow at the elementary level and for students of different levels.

- Want to think creatively, the student must first think actively. Want your students to think actively, the teacher must organize the "thinking classes". This means that classes organized in which all students are thinking a lot according to their abilities the most. Next, the teacher must create the necessary conditions for stimulating creative thinking of students. Finally, impact to developing factors themselves of creative thinking for students in the learning process of the children.

- The development of a number of elements of creative thinking for those students in the same classroom requires teachers to use measures at various levels to match to be able to develop maximum some elements of creative thinking in each target group of students.

8. Research method

8.1. Theoretical research methods: analysis, synthesis, chemical systems, generalizing the resources (books, documents, research - thesis, dissertation, thesis, scientific papers, ...) to build a theoretical basis for research.

8.2. Practical research methods:

+ Educational Survey: survey fieldwork teaching activities of teachers using questionnaires, interviews and class observation to evaluate the situation the teaching profession developing creative thinking for students in elementary schools in the present .

+ Experimental pedagogy: in order to test the feasibility and effectiveness of proposed measures.

- + Supports other methods:
 - Get expert advice: consult experts on matters within the scope of the research topic.
 - Teacher Observation: observe the activities of teachers and students in teaching and learning process;
 - Look at the product education: research of teacher and student products (notebooks, teaching plans, teacher's lesson plans) to contribute to the assessment of teaching creative thinking development for elementary students;
 - Summary of the educational experience: overall the experience initiatives of primary teachers, managers at several elementary schools on the issue).
- 8.3. Methods of mathematical statistics: using statistical software in mathematics mainly SPSS software to process survey data and experimental pedagogy.

9. Contribution of the thesis

- In theoretical aspect:

Built up theoretical framework relatively complete about the theoretical issues related to creative thinking and developing creative thinking for students in teaching. Which include: system and perfect concepts as well as issues related to thinking, creative thinking, creative thinking of elementary students; clarify a number of factors affecting creative thinking as imagination, old things, the quality of the creative personality; clarify issues related to teaching thinking and organizing a "thinking class" - the basis for the development of a number of elements of creative thinking for students;

- In practical aspect:

- + Analyze and evaluate the present situation in teaching thinking in general, developing creative thinking in particular to students through courses taught in some primary schools;
- + Build two groups of teaching measures aimed at developing some elements of creative thinking for students at the end of primary school classes.

CHAPTER 1. THEORETICAL BASIS FOR DEVELOPING CREATIVE THINKING TO STUDENTS IN THE PRIMARY SCHOOL TEACHING

1.1. Historical Overview of research issues in the field of thesis

It can be said about innovative research in a way that the system was started in 1950. Persons who rendered meritorious services is the American psychologist Guilford. J.P. He was the first to offer the concept: convergent thinking and divergent thinking. In particular, divergent thinking (divergent thinking) is the type of thinking broadly, find many answers, many plans beyond the initial framework. This is the kind of creative thinking. Since then, the number of authors, works and research facilities on creative problem rapidly. Only the study of creative problem within the scope of psychology and education has to 14 research groups and the research work of continuous creative with content published mainly creative activities .

At this stage, further research is innovative problem with big names such as Holland (1959), May (1961), DW MacKinnon (1962), Yahamoto Kaoru (1963), Torrance EP (1962, 1963 , 1965, 1979, 1995), .. and some American authors such as Barron (1952, 1955, 1981, 1995), Getzels (1962, 1975), ... the content of this research mainly deals access to a number of fundamental issues of creative activities such as basic standards of creative activity, the difference between creativity and innovation, the nature and rules of creative activities, issues develop innovative capacity and stimulate creativity, personality attributes of creative activity, intuition, imagination, mental inertia, ... in the process of creative thinking.

Capacity building issues for student creativity in schools, already have the book and the author of many articles such as: "Developing creativity in the classroom" (Penick JE), "Research on the ability students 'creativity' (Reid J. and F. King, 1976), "the discovery of creative thinking in the early school age" (Torrance EP, 1965), "The role of creative thinking and intellectual intelligence in academic achievement "(Kaoru Yamamoto, 1963), ...

In Vietnam, the activities related to the field of science truly innovative new start in 70s of XX century, before which these activities are not highly organized. However, the study of creativity is still pretty far less. These include a number of studies as typical: "Train mathematical creativity in the schools" (Hoang Chung, 1964), "How to be creative" (Phan Dung, 1992), "Bring out the creative potential "(Nguyen Canh Toan (eds.), 2004). Some other authors are also interested in creative problem waterway Vu Duong Thuy (2003), Tran Hiep, Do Long (1990), Ton Than (1995). In addition, some authors have lectures on creativity as: "The Psychology of Creativity" (Nguyen Huy Tu, 1996), "The Psychology of Creativity" (Duc Uy, 1999), ...

Research on creative problems in middle and junior high schools, special mention to the two authors Ton Than (1995) and Tran Luan (1995, 1996).

Conclusion:

- First, creative thinking is an intellectual qualities necessary and important human "creative thinking capacity is most important to each person to prepare for his life" (Erick Laudau (1990)). Only creative thinking of human being to promote the every development of human society . Not a way to solve the problem without requiring creativity.

- Second, the importance of creative thinking in learning activities and practices are acutely aware and is taking steps to implement a specific action programs in education and in teaching. The particular creative thinking development, creative activities in general in the learning of the student program is urgently needed jobs and urgency not only by the demands of today's society: "innovative thinking" and promote independent spirit and creative thinking of students - students, ... but also the requirements of teaching process itself, process innovation of teaching methods, educational innovation.

- Third, although creative thinking mentioned and long research on the world, but specifically in the field of primary education in Vietnam is still relatively new. The creative thinking development for elementary students generally are limited by many different causes, which can not match the efficiency measures are considered the main cause.

Therefore, the need for further research in the field of creativity, especially creative thinking to meet the high demands of education: training young dynamic creative.

1.2. The general problem of thinking

In this section, we present some of the most basic issues as the concept of thinking about thinking, thinking characteristics, the stage of thinking, the mindset manipulation. In particular emphasis on thinking manipulation, so that the new phase of thinking reflects only the external structure of thinking, and the content within each stage in the act of thinking is a process takes place on the basis of the operation of thinking. We can say the intelligence operation is within the rules of thinking. According to the results of research in psychology, thinking takes place through the basic operations such as analysis, synthesis, comparison, abstraction, generalization. In fact thinking, manipulation that are not interlaced sequential machines.

1.3. The issue of creative thinking

1.3.1. The concept of creative thinking

There have been many explanations of the concept of creative thinking of the great authors like Vugotxki LX, PE Torrance, Guilford JP, Nguyen Duc Uy, Nguyen Huy Tu ... Despite the

explanation of creative thinking in different angles but other authors have agreed to that creative thinking is an attribute, a special intellectual qualities of man; the nature of human creativity is to find out something new, something unique and valuable society.

In this thesis we perceive: creative thinking is thinking tends to detect and explain the nature of things in a new way, or to create new ideas, new resolution had not follow precedent.

1.3.2. Characteristic of creative thinking

In this topic we agreed with the opinion of the researchers psychology innovative classics as JP Guilford, Torrance PE. The he said that creative thinking is characterized by the elements such as flexibility, maturity, originality.

- Flexibility

It was found that the flexibility of the thinking has the following characteristics: easily switch from intellectual activity to other intelligence activities; easily switch from one solution to another solution; timely adjustment of thought if met obstacles; not stereotyped thinking, not mechanically apply the knowledge, experience, skills have to in these conditions, the new circumstances in which these factors have changed; have the ability to get rid of the constraining influence of experience, methods and ways of thinking have; recognize new problems in familiar conditions, see the new functions of known objects.

- Maturity (fluency)

Maturity of thought expressed in the following characteristics: the ability to consider multiple objects under different aspects; there are multiple perspectives, for a comprehensive issue; ability to find solutions on many angles and many different situations; ability to find multiple solutions to a problem which screening solutions to select the optimal solution.

- Originality

Originality is characterized by the following capabilities: the ability to think and figure out the new combination; ability to find relationships in the external events seemingly unrelated to each other; ability to find solutions weird but know the others solution.

Also, creative thinking also characterized by a variety of elements. Such as: *computer details (elaboration), the sensitivity (problemsensitivity)* (Loowenfeld (1962)), ...

The characteristics of creative thinking on inseparable that they are closely related to each other, complement each other, which is unique for the most important in creative expression, sensitivity issues associated with innovative mechanisms appear. Flexibility, maturity is the basis to achieve uniqueness, sensitivity, detail and perfection [63, tr12].

1.3.3. Personality characteristics of creative thinkers

Many scholars have found innovative research evidence to confirm the personality attributes related to creativity. These are representative names like: DACEY J. & K. Lennon (1998), Csikszentmihalyi M. (1996), Winner E. (1996), Sternberg RJ & Lubart T.L. (1995), Getzel J.W (1975), Amabile T.M. (1996), Torrance E.P. (1979, 1995), MacKinnon D. (1978), Barron, F. (1995), Welsh GS & F. Barron (1952), ... The researchers outlined the attributes of personality as creative: the view from the road, different ways to deal with in a positive way; transition from one model to another model; sensitivity to new issues of the old issues were resolved; diligent labor, charm, persistence and confidence to work more intensely with other qualities such as independence, self-confidence, curiosity, curious, courageous, flexible, sensitive, ... In teaching, teachers need to see the quality attributes of creative personality as one of the essential conditions to develop creative thinking for students.

1.3.4. The relationship between imagination and creative thinking

Imagination is a quality extremely important and valuable human being. Mid-nineteenth century, many authors in the world as Vugotxki LX (1985), Rudich PA (1930), Singer (1999), Bruner (1962), Sutton - Smith (1988), Schwartzman (1978), ... has made great contribution to solving the relationship between fantasy elements with creative thinking. According to scientists, the imagination is absolutely essential and is indistinguishable components with creative thinking. They assert in perception or in creative activities in general have imagined participation and positive nature of creative activity imaginable, thanks to imagine activities that stimulate creativity. Therefore, stimulating the imagination great effect in the development of creative thinking in teaching students.

1.3.5. Obstacles of pathways thinking for creative thinking

According to many scholars, paths of old thinking (also called psychological inertia or psychological inertia) only activity of human psychology tends to maintain the current state (the specific psychological phenomena have been experienced) and against the move to state (psychological phenomenon) new. So this path of thinking makes people's minds are bound by the common knowledge or past experience. It's like a tightly locked box creative potential of human beings, as humans can not break through to creative thinking. Thus, we can see old things extremely helpful and necessary in life. It helps people not to think about what was familiar. However, it is also a barrier to discover new things. This is an issue that the developing dayhoc creative thinking for students, teachers need to note the impact that appropriate corrective old things hinder creative thinking.

1.4. Creative thinking of elementary school students

In this section we present an overview of the problem of psychological characteristics of primary school pupils, thinking and creative thinking characteristics of elementary students. Which emphasizes:

+ Nervous system of elementary students are thriving in the period. Perception can bring universal, whole, less going into detail, not proactive nature, tied to action and practical activities. Note that not all still prevails in the primary school students. Imagine the elementary students have grown rich. However, imagine the top-level students are still scattered, less organized, fantasy images of simpler, or change, is not sustainable.

+ The operation thinking as analysis - synthesis, generalization - even rudimentary abstraction layer in the early elementary level, primarily conducting analyzes - visually - act as direct perception objects. But in the learning process accretion layer on the likelihood analysis - synthesis, abstraction - generalization in the minds of children with the boom. Alumni can analyze objects without practical actions for that object. The changing relationship between figurative thinking, visualization specific to abstract thinking, generalization is dominant and new features, highlighting the activities of thinking of the last primary school students.

+ Creative thinking of elementary school students have relatively developed. Specifically: First, it can be stated that the differences between adult creative with children's creativity is only the degree of product innovation, problem-solving level, the level of independence throughout the creative process. As for the mechanism, in principle, the nature of creative thinking is no difference between the creativity of elementary school students and adults with scientists. Second, the level of creative thinking of students is the primary Nguyen Huy Tu [101, Tr16] that at the first level: creative expression. There is also the expression of creative and innovative manufacturing innovations (level 2 and 3) in the scale of degree of creativity: creative expression (the most basic level of creativity not require the skills public key); innovative fabrication (requires certain skills - information processing skills or technical skills); innovative initiatives (characterized by the

discovery or find new relationships based on the disposition of previous information); creative modification (building ideas requires a certain intellectual level of the subject); creative invention - the highest level of creativity (creating physical products or entirely new spirit, the way of action unprecedented in the experience). Third, some elements of creative thinking in elementary school students are also reflected in the flexibility, maturity, detailed, unique, ... at different levels through the path way resolved through problems and learning products. In teaching, teachers need to identify the characteristic elements of creative thinking is reflected in each individual student to have appropriate effects make it more developed.

1.5. Some issues about teaching thinking for students

1.5.1. The concept of teaching thinking

Teach students to think or teach thinking is to make people learn how to think well, to thinking skills more effectively. Teaching thinking that causes students to apply many states thinking and application of a state of thinking effectively. In other words, teaching thinking is simply finding ways to make students think the most out of every learning situation. For students renovating of their own thinking.

1.5.2. How to create a "thinking class"

Want to develop students' thinking in teaching, first need to create a "thinking classes". To create a "thinking class" requires a combination of many factors. In particular, the main factor in creating a thinking classroom is defined as an environment for teaching and learning is conducted, teachers and students as teachers and learners. These factors have been linked closely together. In particular, the classroom environment is considered external conditions of learning activities, active thinking. If a good environment, it will enhance the individual psychological attributes, including the development of properties makes thinking activities, creative activities. If the environment otherwise it will hinder, inhibit thinking. Second, a "thinking classes" are classes that take place in the coordination between the teacher's teaching methods and the corresponding behavior of the student to solve the task of learning a constructive way positive and effective. At that students not only discover but also to discover knowledge, mastery learning approach, method of thinking.

According AnneJ. Udall and Joan E. Daniels (1991) [125], in the "thinking classes", the teacher is an important factor inspire and guide students' thinking. The role of teachers lay the foundation for the thinking ability of students through the development of organizational processes to build a lesson "thinking" a systematic manner. Includes:

1. Identify learning content can be taught "thinking".
2. Determine the type of thinking will be taught and stressed (creative thinking, critical thinking, ...).
3. Identify the strategies (methods and techniques) that teachers will use to teach.
4. Determine the behavior of students that teachers will encourage and develop.
5. Outline in detail the process of the lesson.

However, all of the "thinking classes" to the students as participants, implementation of learning activities. The role of the student will be expressed through their behavior in the classroom.

In short, creating a "thinking class" is to create a class in which every student not only knows the only good study but who knows good thinking. In addition to the classroom environment to promote students' thinking, the teachers and students are seen as two important factors to create "thinking classes".

1.5.3. Development of some elements of creative thinking for students

1.5.3.1. Development Concept

In view of the dialectical development: development of a philosophical categories used to generalize the process forward movement from low to high, from less than complete perfection. Development is the process itself of all phenomena. Thus, development is a process of objective, independent of human consciousness [86].

1.5.3.2. Development of some elements of creative thinking for students

From concept development philosophy and concept of the general intellectual development, development can understand some elements of creative thinking for students in the teaching process is the use of measures of teachers and methods of teaching appropriate to the impact on the thinking process of students making the thinking process that demonstrated the versatility, flexibility, maturity and unique way ... in solving problem as well as in the learning products. In other words, make the thinking of students demonstrate characteristics of creative thinking in the learning process.

1.5.4. Measures to develop some factors of creative thinking for students

1.5.4.1. The concept measures

- According to Vietnamese dictionary elementary textbooks (Nguyen Nhu Y (eds.)), measures is way to do, how to proceed.

- Teaching measures are the ways to use or apply separately or in combination of different factors such as teaching methods, facilities, tools, materials, situations, environment, time, technology, administrative, management, relationship education, and psychosocial factors of the learning process and the learner to conduct teaching, addressing the teaching task [38].

1.5.4.2. Measures to develop some elements of creative thinking for students

There is a common understanding: developing measures some elements of creative thinking for students is a combination of the impact of the subject-oriented teaching (teacher) to school subjects (students) focused on the learning process of students to form and develop the qualities, characteristics of creative thinking in students, making students' thinking process in solving learning tasks demonstrate characteristics of creative thinking.

Conclusion Chapter 1

First, we evaluate the results, achievements and problems still exist in the field of innovative research in general, creative thinking in teaching in particular. At the same time, we also explain the necessity of the thesis.

In this chapter, we focus on research issues thinking, creative thinking. Includes common problems of private teaching, creative thinking, as well as the characteristic elements of creative thinking.

In addition, a number of issues related to creative thinking were also studied. Issues such as personality characteristics of creative thinkers, psychological obstacles to creative thinking. Another factor closely related to creative thinking and imagination are we clarify. Furthermore, we also characterized as cognitive thinking and creative thinking of elementary school students, provide the basis for measures to develop some elements of creative thinking appropriate for students, ensuring both strength in teaching.

In particular, in this chapter we analyze in depth the issues related to the organization of a "thinking classes". Issues such as the notion of teaching thinking, creating conditions for "thinking classes", a number of concepts, basics of thesis as developed and developing a number of factors from creative thinking for students, measures and measures to develop some elements of creative thinking for students is also determined to clarify, provide the basis for developing measures several factors of innovative thinking giving students mentioned in chapter 3 of the thesis.

CHAPTER 2. CURRENT SITUATION OF DEVELOPMENT OF CREATIVE THINKING TO STUDENTS IN THE ELEMENTARY SCHOOL TEACHING

2.1 Overview of the current situation survey

2.1.1. The survey purpose

Explore and develop creative thinking for students in elementary teaching today. Specifically:

- Perceptions of teachers about teaching thinking, creative thinking, the necessity of the development of creative thinking for students.
- Current status of development issues creative thinking for students in the teacher's teaching today.
- Expression of the creative thinking of students in the learning process.

2.1.2. Objects for survey

Subjects were surveyed teachers to teach in a primary school in the province of Nam Dinh, Thai Binh and Hanoi, with all students in grades 4, 5 schools surveyed.

2.1.3. Survey Methodology

To find out above issues we used methods: survey methodology education; holistic approach to education and experience in research methods relevant documents to the current status of teaching to develop creative thinking for students.

2.1.4. Description survey Content

To survey the current status to develop creative thinking for students in elementary teaching today, we have conducted the following specific content:

- + Suggest teachers and students to answer questions in share opinions (questionnaires for teachers & students).
- + Direct interviews managers and some teachers are teaching blocks 4 and 5 of the school investigated.
- + The number of lesson hours of basic subjects such as Mathematics, Vietnamese, Nature - Society.
- + Chat with students about their perceptions of creative thinking and observing the expression of the creative thinking of children in school.
- + Research documents, see notebooks, find out a lesson plan, teaching plan of the teacher.

2.1.5. Describe the evaluation of survey results

We evaluate the results of the survey through the main parts:

- 1) Through talking, interviews
- 2) Through polls
- 3) more than enough time
- 4) Through observation, experience summary, product research education, ...

2.2. Survey results reality

Through survey results, we believe that in general, the development of teaching creative thinking for students currently in elementary schools is very limited.

2.2.1. Awareness of teachers about creative thinking and teaching developing creative thinking for students

Through the questionnaire results, via chat, interviews, roundtable we found the majority of teachers also general concepts and vague about creative thinking and creative thinking of elementary students, even those misconceptions about them. It shows in the inconsistent, heterogeneous, even contradictory in answering questionnaires, the roundtable interview, ... The development of creative thinking for students in other teachers' teaching very monotonous, no opinion, way, clear measures. It is most evident through lesson plans that we have now. Through these lessons, can see that:

- First, in teaching hours, most teachers only pay attention and try to preach all the content has been presented in the textbook, very little, not even adding questions or exercises to expand, fix deep knowledge and effective exercises to develop creative thinking for students.

- Second, teachers are not spending adequate time for students to think about the problem to be solved. The operation was conducted to discuss very fast, so hurry, it seems to done.

- Third, the teacher has not really facilitate student activities, exchange, leading to students just follow the teacher's solution, forming them think that they can not figure out how other, not create competition, challenge, stimulation and creativity of students. This actually hinder creative thinking of students.

- Fourth, teacher have not noticed to create conditions to stimulate and exercise the creative thinking of students, such as: less attention forging flexible use of the basic operations on the distributed mindset analysis, solving learning tasks; not blindly forging habits - trial and error in the search process, not paying attention stimulate creative imagination through the specific content; no attention trained versatility, flexibility, maturity in solving open learning content; undifferentiated content teaching prevail thinking creative development division as well as guiding organizations to promote creative thinking in groups of students in the class.

All of the teachers's performing in teaching hours as above will lead to a result not promote creative thinking of students.

2.2.2. Expression of creative thinking of students in the learning process

As a result, we can see the level of implementation of some activities (behavioral, employment) of students to create a "thinking class" such as active participation in learning activities; listen to your speech; task persistence chasing though that task may be difficult, ... most fluctuations in the "irregular". This proves that there is no actual students' learning activities contribute to the "thinking class". In addition, the activity (behavior, employment) shown by creative thinking of students also very limited, even the most actions which was never carried out by students, such as operation "Find out how to solve and unique problem or question, or problem assignments. (unique)", majority of students in Nam Dinh have never done (68%); activities "Given the deep questions on the topic is addressing (maturity)," majority of students in Thai Binh (69%) had never done.

2.2.3. Overall Assessment

Through the analysis of state survey results, we believe that the overall development creative thinking for students in elementary school now has not been given due attention, namely: Most teachers are not created a classroom environment "safe" and "friendly", all students are treated with respect, fairness, ... and a classroom atmosphere just open both to encourage competition, cheers students' thinking. Although teachers were less aware of the need to develop such factors as flexibility, maturity and originality of creative thinking for students and can work to develop it for the students but most teachers are no specific measures to develop creative thinking for students. This is shown in the questionnaire results, in conversation, interviews, ... Especially in the particular instance we now teach in the survey estimates. Specifically, the project now some of the lesson, the teacher, we did not see mention of the teacher development issues creative thinking for students. During the lesson, the content can be exploited to develop the elements of creative thinking for students but teachers are ignored. In addition, teachers are not well facilitated, encouraged students in the creative process of solving the learning task. Many teachers do not pay attention to the development of creative thinking for all pupils, including the notion that teachers have creative potential in every child is in fact normal teaching, they also not pay attention to developing creative thinking for groups of average students and below average. Finally, expression of activity, behavior represents innovative thinking in students not learning more, is not clear. Specifically, students:

- * Not knowing and not have the habit of finding ways to solve a problem;
- * Apply knowledge of machinery skills, solutions. For example, when comparing two or more than two fractions, students always have the same rules and compared (rules apply comparable machines) without applying the properties of comparing fractions that may not necessarily must be the same model number, ...
- * When performing post award, students mostly follow the sequence of steps counted, perform the calculations themselves, students painstakingly meticulous calculation step, carefully but do not know gross, do step off the computer, not combination of skills and computational inference problem; manipulate the nature of the calculation, the typical solution method to solve a creative way;
- * Mostly writing, write the form out without knowing how, combined (desertion, add extra components, using words expressive, unique, ...) to make sentences, articles lively; not write the essay writing assignments "digestion" but mostly closely follow the order;
- * Unknown apply learned knowledge in handling flexible, creative and practical situations. Such as separation of unknown substances in the solution, the mixture in the usual way with the other; utilize wind power, water power, air, oxygen, temperature, sun, light, ... to solve the task efficiently, economic, ...;
- * Unknown splitting problem (homework questions) to solve each part with ease;

This is the consequence of not paying attention of teachers develop creative thinking for students in their learning process.

Conclusion Chapter 2

In general, the development of creative thinking for students currently in elementary school has not been given due attention. It shows in the work: perceptions of teachers and students for teaching thinking, creative thinking was very vague; not have an appropriate pedagogical environment for the teaching of thinking in general, develop creative thinking for students in particular; teachers do not have teaching methods to develop creative thinking for students in an efficient manner; in the teaching process, teachers are not paying attention to the development of creative thinking for many student groups (fair, good, average, ...), ...

CHAPTER 3. DEVELOPMENT MEASURES SOME ELEMENTS OF CREATIVE THINKING FOR STUDENTS IN LAST PRIMARY CLASSES

3.1. Group 1: These measures create the necessary conditions to develop creative thinking for students.

We believe that before developing a specific type of thinking (critical thinking, creative thinking, ...) for students, teachers need to create the necessary conditions to promote thinking follow a trend desired. Want to develop creative thinking for students in teaching, necessary conditions is teachers who should created to be creative environment in the classroom as well as the organization of "thinking class". Objective measures of group 1 is the teacher who use their the measures and teaching technical to create an environment stimulates creativity in the classroom and lesson organization in which all students are thinking a lot according to their abilities the most.

3.1.1. Creating innovative environment in the classroom

Innovative environmental conditions are considered outside of creative activities. If a good environment, it will enhance the individual psychological attributes, which attributes the development to create innovative activities. If the environment otherwise it will hinder, inhibit creativity. Therefore, a question is how to create a creative environment for students. We suggest some possible ways to create stimulating creative environment for students, namely: education for

students desire, the excitement of acquiring new ones; oriented properly motivated for students; create the test - raises creative activities; need to remove obstacles preventing creative activity of students; remove psychological obstacles "old things"; actively encourage creativity in each student.

3.1.2. Organization "thinking classes" - the basis for the development of creative thinking for students

Among these measures will have two parts: the first is teacher develop measures and technicals teaching "thinking" for themselves, the second is teacher use measures and techniques teaching "thinking" to develop the student's behavior (referred to as the thinking behaviors of students) to create a "thinking class".

3.1.2.1. Teachers develop teaching thinking methods to create his "thinking class"

The fact that the success of a thinking lesson mainly through teaching methods that teachers conduct. Follow us in order to promote students's thinking, when teaching each specific lesson, teachers need to develop and implement the following measures:

- Measure 1: Teachers emphasized the responsibility of the student to the learning task.

This measure is effective orientation of thinking process of students and aims to appeal to students of their learning tasks. The problem is how teachers can focus their students on academic tasks. Perhaps the best technique to be "key" that teachers can do the following:

- + Specify the objectives of the lesson.
- + Specifies the discussion questions and write the questions on the board so students can observe. Also ensure that the central question to be typical.
- + Carry out one or more activities of student evaluation process. May use a tape recorder or video questions to assess the lessons.

In the same way, teachers will make students ready prepared, take the initiative to focus on their learning task a very natural way. At the same time will help students avoid discussing irrelevant issues and not be diverted to conduct follow-up activities of the lesson.

- Measure 2: Use open-ended questions and open-ended questions.

The question should be how they can stimulate student thinking? The education experts believe that one of the dominant questions of stimulating thinking of students most is "open" questions and the "expand" questions. That is the question with more than one answer, and did not answer with "yes" or "no". The open-ended questions in order to exploit the information deeper, broader-based answers earlier. That is the question to clarify, support, or explain in detail, specifying the ideas in the previous answer. These types of questions can stimulate student self-discovery and problem solving, stimulate the creativity of students. Use the questions "open" and the question "extension" is considered one of the important measures to develop thinking of students.

Teachers can develop some measures of techniques such as:

- + Remember these questions before the lesson and hang them in places most easily observed during the lesson, and then:
- + Discuss with students the question "open" questions "expansion";

Once aware of the effects of the question "open" and "extended" techniques will help teachers develop and use them effectively in teaching. In particular, the question "open" when used to hint, suggest the problem also helps students self-discovery and problem solving, actively stimulate their creativity.

- Measure 3: Spend time waiting so as students to think and find an answer or response to the request of the teacher.

- Measure 4: Encourage the students' reactions and accept the diversity of the students' answers.

In teaching creative thinking, a fundamental goal is to develop as much as possible the reaction of students. Although few studies have demonstrated that many students say they will increase creative thinking in them but make sure that if fewer teachers say they will create more opportunities for student response and therefore it will make the process work nerve is more powerful.

- Measure 5: Do not repeat the students' answers and not give opinions or judgments of student answers.

- Measure 6: Require students flashbacks, reflected their thinking process.

When teachers ask students to explain the thinking process through which students get the answer, or how to plan for solving the problem will take effect evaluation, testing the efficacy of the thinking of each student. It can occur during and after thinking lessons.

Here are some good ways to develop these measures:

+ Use questioning techniques "reflection" at the end of each activity. (For example: Why did you do that? She decides how? These models are what you will find? ..).

+ Only for students to know how you find the answer or how to solve problems and then ask students to follow the same. In addition, teachers can teach techniques to listen, read and research support for reliving thinking process of students.

+ Provide a list of how to solve problems such as reverse problem, splitting problem to solve in part, relate to the same issues and looking for models solved.

Thus, in addition to stimulating effects of thinking of students during the learning process, the measures also work to train some of the characteristics of creative thinking for students. Specifically: measures 2 that are geared to forging HS flexibility, versatility and dynamism of thinking; measures 3 have the effect of making students to think about the problem, questions which given make thinking of students be created in freedom of their imagination (the thinking subject); measures 4 will make students see critically, suspectedly problems, effects development of critical of thinking; measures 5 encourage and facilitate students freedom to think, thinking to find solutions or problems in understanding their views. Measures teaching thinking can be applied to all hours of teacher training.

3.1.2.2. Teachers use teaching methods of thinking to develop students' behavior in the "thinking classes"

Although, to be held "thinking class" effecttly, the role of the teacher is incredibly important and dominant. It is oriented and encompass all the activities of the classroom. However, the subject of "thinking class" is the students as participants, implementation of learning activities. It can be affirmed in "thinking class" will be parallel interaction between measures teaching thinking of teacher and measures developing the behavior of the corresponding thinking of students. The acts are:

- Acts 1: student participation and persistence chasing task although it can be difficult task.

- Acts 2: Students give many reasons for the answer.

- Acts 3: Students take the time to think about an issue and spends enough time for an operation.

- Acts 4: Students offers many different answers to a problem, and use specific words, precisely to express.

- Acts 5: Students listen to what others are saying, and will ask questions complex / difficult recently conducted on the subject.

- Acts 6: Students thought, recalling his thinking process.

The development of the student's behavior in thinking class also requires ways (technical) specific.

In summary, we see that, for each measure of thinking teaching of teacher, there will be a corresponding behavior of the students, more typical of other acts and dialectical relationship with measures of teacher. Such parallel with measures to attract the attention of the students to focus on lessons learned from the start of the "teachers emphasize students' responsibility for learning task", the corresponding behavior of the students will be "participation and persistence chasing task although it can be difficult task. "For it requires the development of specific measures from the teacher. Because that's just the teachers develop their teaching methods, just as the teaching methods used to develop thinking corresponding behavior of students.

3.2. Group 2: The measures developing creative thinking for students

We call Group 2 is measures group develop creative thinking for students is to emphasize the measures in this group specificity factors for the development of creative thinking for students. In other words it has the advantage to develop creative thinking, different measures of specialization to develop logical thinking, critical thinking, ... The goal of the group is to develop measures 2 some weak peculiarities of creative thinking for students. After you have established a creative environment in the classroom as well as create the "thinking classes" - the basis for the development of creative thinking for students, the teacher should continue to work as stimulus creative imagination for students, establish a habit of groping - trial and error, practice the basic operations of thinking and the impact on specific elements of creative thinking for students in the learning process.

The development of creative thinking of our students are employed in a range of subjects and objects for students (pretty, good, average, below average) should be in each measures presented below, teachers need the flexibility to apply different levels to suit each student group in the distribution of the teaching content (assignments, questions) combined fertilizer guiding organizations to suit each target group students in the class to promote maximum creative thinking of every student.

3.2.1. Stimulate the imagination for creative students

Affirming imagine impact important factor for creative thinking (the imagination is the source of all creation, without human imagination can not create). In every creative activities of human beings are the active participation of the imagination. Therefore, stimulating the imagination of students are considered measures to create the basis for the operation of creative thinking of students.

Based on the characteristics of elementary students' imagination, in teaching, teachers can stimulate students' imagination by one of the following ways:

- + Use the questions suggested comparisons between things and phenomena (especially used in Vietnamese subjects with homework rhetorical methods: comparison, metaphor, metonymy, onomatopoeia exercises , symbolic, ...);

- + Using words rich visual effects suggestive, suggestive association to rephrase the abstract problem (word-rich images to simulate, reproduce, suggestive association to a region (subject Geography), a battle history, a history lesson, a landscape, ... (History);

- + Use pictures, models, diagrams straight lines, simple mind map to outline the simple, abstract questions, exercises (using many of Mathematics);

- + Mining relationships between the elements, the composition of an object, among objects together (proportional, inversely between the quantities in the problem, ...), ...

3.2.2. Create the habit of groping - trial and error for students

We know that one of the creative path is inductive (inductive totally not in elementary school), that is, away from the phenomena, specifics to generalizations of the common ones, the nature and generalizations. In particular, groping - is a trial and error manner, basic path. From this similarity, it can be stated forging groping habit - trial and error is one way to develop creative thinking for students during teaching process.

3.2.3. Train using flexibly the basic operation of thinking

No matter what type of thinking, creative thinking, critical thinking, ... the thinking process must also accomplished through the manipulation of thinking. So want to develop the kind of thinking is indispensable to the practice of manipulating minds. Here the train of thought manipulation is considered that the development of "quality" as to develop creative thinking for students. There are many operations thinking, but thinking some manipulation was mentioned in the first chapter of the operation is considered the most basic thinking, often used for elementary students. Specifically, the need to manipulate the thinking for students is forging analysis - synthesis; Compare - similar; abstractions - generalized.

Teachers should be noted, if only to stop at the forging operations thinking in any cognitive activity, active learning any subject they can not develop creative thinking for students. Want to develop creative thinking needed to make the use of intellectual manipulation that reaches the soft, flexible, mature, unique, ... In other words have forged the characteristic elements of creative thinking for students.

3.2.4. Development characteristic factors of creative thinking for students

Every type of thinking will be reflected through its characteristic, just as the development of new features, the main development was the main contents of that kind of thinking. Thus, the final work of the development creative thinking for students in teaching is teachers who need direct impact on the characteristic elements of the creative thinking for students by specific ways, techniques.

Creative thinking has more specific factors, however, in the framework of this thesis, we will focus on three basic elements: flexibility, maturity and originality. Three specific factors are considered fundamental to achieve consensus in most studies of the structure of creative thinking, and three factors are consistent with elementary students.

How common is: if the flexibility (flexibility) of thinking is characterized by the ability to easily move from intellectual activity to other intellectual activities, one of the techniques to train in teaching, it is developed for students looking to know situations posing under different angles. If maturity (fluency) of thinking is characterized by the ability to find multiple solutions to a problem is one of the techniques to train in teaching, it is set to develop students know in various problem-solving methods law, know the optimal selection method ... *specifically:*

3.2.4.1. Development of thinking flexibility (flexibility)

In teaching, teachers need to take measures, specific impacts in order to escape students from the rigidity, paradigmatic and instead is flexibility in thinking of children, then the children will have multiple glance dimensional, creative flexibility in solving learning problems.

So, let's forged flexibility of thinking for students in the following ways:

* First, teachers should help students realize that the same content can be expressed in many different forms and vice versa. Looking at an object, a problem in many different angles, in correlation with the other phenomena, thereby solving creativity.

* Second, hammered for mature students know to use the operation of thinking fluently on problem-solving solutions. Such manipulation operations analysis - synthesis:

* Third, to help students see when analyzing a problem, a thing, an object of awareness, need multiple perspectives, and comprehensive overall.

* Fourth, teachers need to make students recognize the reasonableness of the answer or inference, to solve the problem.

* Fifth, flexibility of thinking (flexibility thinking) as opposed to rigid thinking, one –sided thinking. To develop flexibility of thinking for students, teachers need mobility or coordination, general combination of the operation of thinking, the deductive method.

In addition, teachers also develop flexibility of thinking for students through following forging skills (especially in math):

- Ability to read threads, understand and analyze problems (questions, the assignment, homework, things, events ...).

- Ability to apply the rules, formulas, sentences, genre, ...

- Skill conversion situations manipulated by applying abstraction.

- Ability to imagine, think.

- Ability to separate subjects into objects, smaller problems

- Reasoning skills, reasoning

- Skill expression:

Besides the way, for the general technical subjects, and the ways specific characteristics for each particular subject. For example:

- + To forging flexibility of thinking for students in Vietnamese courses, teachers should enhance pupils' perform learning activities such as:

- Ask questions with the words, idioms have to;

- Writing to put into place to complete the sentence;

- Find the words in the topic;

- Write sentences, paragraphs using the given words;

- Write a paragraph or open all themed according to the form of direct and indirect;

- Telling the story of creation;

- Separation of the clause, the clause linking (simple sentences into compound sentences, compound sentences into simple sentences) ...

- + In teaching Nature & social, teachers need forged for students the ability to synthesize and generalize object awareness, encourage students to answer the questions based on their understanding. When teachers do so, students must sum to generalize information, features, events had to answer questions in the language of the students. Next, teachers should ask students to express their answers a coherent, concise, precise, exquisite, unique, very personal for each student.

Besides, in teaching subjects, teachers need forging for students: observations known and well observed; summary questions, exercises in many different ways; analyze problems in many different directions; express sentence, writing topic, problem, solution, ... in many different ways; exploit all these factors have to; think of all the known methods of solution which method can apply, ... Such as wrought for students to know and observe good observation is to help students find the definition, that is calculated separately, hook the corners of things, matters. Especially in Vietnamese subjects, many observers, observation skills, good observation not only helps students write essays or but also enabling them to feel the beauty of poetry, literature and subtly deep.

3.2.4.2. Developing maturity (fluency) of thinking

Maturity (also called fluent, skillful) of thinking is other with maturity of knowledge or understanding a unit of knowledge. The maturity of thinking is the operations master, master in problem solving is done through the operation of thinking. Remaining maturity of knowledge is

knowledge held firmly and systematically. However, the relationship between them back and forth, just complementary, just the premise, just the result of another.

In teaching, teachers can develop maturity of thinking through forging for students:

+ Know the planning and implementation programs for each specific issues: setting up the protocol, set outline, outline, summarize the topic (if necessary), there is a clear answer for each step solution .. .

+ Reflex sensitivity with new problems, problems that arise in the process of problem solving tasks.

+ During students' homework guidance, need for forging a habit we do not accept a solution familiar or unique, stimulating them to explore and propose different ways to solve a problem and always seek out the most concise way, unique. This approach helps students understand and at the same time has deep knowledge of a problem, just lace inference methods, computational flexibility for specific issues.

+ When the problem is solved by solving a long line, with many small steps count, should think that there may be other solutions briefly brighter.

+ Train for students systematized knowledge know, during skills training, review a specific subject knowledge.

Specifically, during practice, review guidelines for students, teachers should:

* Train for students the habit system solution for each type of article pointing out the optimal solution,

* Train for students to learn and understand, a profound problem with the overall look of knowledge, common in all types of circuit specific knowledge.

We know that knowledge ruggedness of opportunity with flexibility of thinking is the manifestation of maturity (fluent, clever). Here is an example:

Ask for one of the following terms:

- a) Four beach house.
- b) Always beside.
- c) Generic fight back hard.

(Last 4/tr56, Practice words and sentences / Vietnamese 5, Episode 1)

This is an article on the subject vocabulary: friendship - collaboration. Exercise effects wrought maturity, the clever thinking to solve for this exercise, students must also understand the meaning of the idiom (ie understanding, interpreting idioms is a difficult request for elementary students because most idioms, proverbs generally infer meaning, figuratively and hierarchical profound significance. highly abstract it). With exercise form sentences with the last word requires the ability to think creatively when solving the sentences with the idioms given much more difficult. Because both sides to ensure the sentence structure, grammar structures to ensure sentences reflect a generalized meaning and depth. To solve this just requires solid knowledge requires both flexibility, flexibility, flexibly of thinking. This combination will help develop maturity in students' thinking. The level of creativity in thinking of students will depend on the uniqueness, of each student's specific student questions. For example, with idioms: "Four Sea a home", students can put the question like: brothers like Four sea a home; Fraternity as four sea a home; Four sea reflected a spirit of friendship - cooperation, solidarity and peace; Four represents a sea an idea of human progress; ...

In summary, during instruction students solve exercises open - requires solid knowledge combined with the flexibility of thinking when solving, teachers need to be aware maximize the

advantages of this combined with all types of techniques, as outlined measures to develop the maturity of creative thinking for students.

3.2.4.3. *Development uniqueness (originality) of thinking*

The originality of creative thinking of students in learning shown by the novelty, originality, typical solutions for exercises, reasoning, inference process of solution searching. Sometimes originality of creative thinking translates into the uniqueness of all solutions.

The originality of creative thinking in students is reflected in the thinking process and in the product-specific thinking is in the process of analysis, inference and assignments, answers to relatively simple level, with subjects such as Mathematics, students just need to get the job done after that has demonstrated uniqueness of thinking: gross perform all the steps included in the solution; find multiple solutions, figure out the best solution; problems derive from diagrams, abstracts, other estimates put the problem; all explained by the indirect inference, astute observations, the rigorous logic, logic that has demonstrated uniqueness in the thinking of students.

We illustrate the students through the process of solving problems following:

Lesson 1: Calculate the value of the fraction

$$P = \frac{1991 \times 1993 - 1}{1990 + 1991 \times 1992}$$

When guiding students solve this problem, teachers can use suggestive questions: can I split in 1993 into 1992 + 1 is not?

Through questions suggested above, students will relate to the knowledge learned about fractions, fractions equal to 1, the fraction numerator by the denominator, some with a master's, which would have been ... solution "unique" (as opposed to conventional solutions) to the problem.

The following solutions are considered unique:

We have:

$$P = \frac{1991 \times 1993 - 1}{1990 + 1991 \times 1992}$$

Splits 1993 1992 + 1. I have:

$$P = \frac{1991 \times 1992 + 1991 - 1}{1990 + 1991 \times 1992}$$

$$P = \frac{1991 \times 1993 + 1990}{1990 + 1991 \times 1992}$$

$$P = 1$$

Thus, when solving the problem on, just a split operation in 1993 into 1992 + 1, for not only did the moves are much simpler, but it also represents an inference problem, a way of thinking is "breaking way" for elementary students, not only demonstrates the "unique" in all nicely done, but also in ways of thinking to find a solution. Stimulating students to think "an exception" by suggestive matter will have an impact on development in the children not only unique but also features flexible, elegant, sensitive issues of creative thinking.

With Vietnamese subjects, the uniqueness of the thinking of students reflected in the use of words, sentences vividly: students know to make sentences by clicking the word special, unique, innovative, high-value expression; known measures used rhetoric as comparison, personalization, message language, spoken in the island in writing sentences, paragraphs, essays under the theme; find words expressive value used in sentences, paragraphs makes them so unique, special ...

With natural sciences - social, originality shown in the students come up with good solutions with other solutions available in books or other resources (how to avoid some common diseases,

how exploitation and rational use of some resources, the preparation and processing of a number of conventional narrative of events, story, character, unique history, distinctive, idiosyncratic,.. ..)

Summary: The primary students, the flexibility, maturity and originality shown only at the simplest level, there is flexibility in thinking, acumen approach problems, the way dance, break conventional rules in solving, reasoning and of the problems that have already shown to be the basic characteristic of creative thinking. Together these measures and techniques are presented, teachers need to use differentiation to suit each student groups to develop the maximum of the above factors of creative thinking for them.

Conclusion Chapter 3

Measures we propose consists of two groups: Group 1: These measures create the necessary conditions to develop creative thinking for students; Group 2: Measures to develop creative thinking for students. In particular, the Group 1 is considered a prerequisite for other measures groups. Among the measures to develop creative thinking for students (Group 2), measures to stimulate the imagination be considered is the source for innovative, establish a habit of groping - test is considered wrong path, way of creativity, forging methods using flexibly thinking the basic operation is considered that the development of "quality" - is the content of an act of thinking. However, if you just stop thinking forging operations is not enough to be creative. In other words, just when everyone thought processes to achieve flexibility, mature, unique, new ... then it shows the characteristic of creativity. Therefore, the final measures of this group is to directly impact on the flexibility, maturity and originality of creative thinking by the way, specific techniques. Both groups above measures have reciprocal relations with each other dialectically. At the same time, in each group of measures has close ties with each other, both The other measures premise is just the result of other measures. The development of creative thinking of our students are employed in a range of subjects and objects for every student in every measure should be presented, teachers need to apply according to the different levels in accordance with each group of students. In addition, teachers need to use combination of general measures (Group 1) with specificity measures (Group 2).

CHAPTER 4: EXPERIMENTAL PEDAGOGY

4.1. Overview of experimental pedagogy

4.1.1. Practical purposes

Due to time constraints, so the empirical is only the first step in testing the feasibility and effectiveness of the measures within subjects.

4.1.2. Empirical content

Empirical content will include:

- + The test input information, check on the time between experimental and test phase output-oriented design test some elements of creative thinking of students.

- + Teaching Mathematics, Vietnamese, Science, History, Geography ideology of measures developing some elements of creative thinking for students have been built.

4.1.3. Experimental Subjects

We conduct experiments for students in grades 4 & 5 of 6 elementary schools in the province of Nam Dinh (3 schools), Thai Binh (2 schools), Ha noi (1 school). In the experiment, we chose to conduct the experimental class and the control class have similar sizes, students have relatively equal academic and conditions similar learning, teachers teaching in the classroom experimental and the control class qualified and experienced similar.

4.1.4. Experimental time

We conduct experiments in time approximately 5 months, in the second semester of school year 2011-2012.

4.1.5. Experimental Organization

Experimental class taught by homeroom teacher according to measures developing some elements of creative thinking in the subject, and grade school still normal controls. After the experimental period, we the students of the experimental class and the control class test output with threads all the same. From the results obtained following the test, combined with other assessment measures, we conducted a comparison with the results of input and draw conclusions from it.

4.2. The experimental results

4.2.1. The dimensions are evaluated

We conduct an objective assessment on the following aspects:

+ *Quantitative assessment (through test scores)*

Scoring is built as follows:

- Type of good: The tests achieve 9-10 points: demonstrate flexibility, maturity and originality of creative thinking at a high level in addressing the questions and exercises in test subjects.

- Type of pretty: The tests achieve 7-8 points: demonstrate flexibility, maturity and originality of creative thinking at a high level in addressing the questions and exercises in test subjects.

- Medium: The tests achieve 5-6 points: demonstrate flexibility, maturity and originality of creative thinking in the average level in addressing the questions and exercises in test subjects.

- Weak type: The tests achieve 1-4 points: No demonstrated flexibility, maturity and originality of creative thinking in solving the questions and exercises in test subjects.

- + Evaluation of Qualitative: we evaluated the expression of flexibility, maturity and originality of creative thinking of students through:

- The tests of creative students.

- In the process of learning.

Qualitative assessment was presented in our comment section three lessons and through experimental pedagogy of the teachers commented experimental teaching, the teacher supervises the management board and the experimental school.

4.2.2. Preliminary Interpretation of test subjects

Although the test subjects focused on checking the level of development of some elements of creative thinking test but the problem is still based on a common standard of knowledge and skills specified in the program. Questions, exercises in each test subject focuses mainly on the examination of three distinct elements of creative thinking (flexibility, maturity and originality) shown in solving problems and in production all student work products. In each session will be approximately 50% of all standard in difficulty but not too hard on thinking for students. The post will have the effect of fertilizer level of creative thinking of students in each group (pretty, good, average, ...).

4.2.3. Analysis of experimental results

4.2.3.1. Quantitative assessment

Assessment through quantitative analysis of the scores of tests, comparing scores before and after experiments, as well as a comparison between the experimental class and the control class.

4.2.3.2. Qualitative Assessment

Qualitative assessment through lesson some comments and opinions empirical evaluations of the experimental teachers taught, the teacher supervises and evaluation of the school administrators are experimental teaching.

4.3. General assessment of experimental pedagogy

It can be said the experimental phase was completed pedagogical goals. The measures we propose innovative ways did teachers teach and how students learn. More importantly, the application of teaching methods to initially stimulate the development of a number of elements of creative thinking for students, is evident in the academic achievement of children. Specifically:

+ *To the Teacher:*

- In the experimental school, a classroom environment cheering for the thinking and creative thinking activities are paid empirical attention by teachers. During school hours, teachers are always encouraging students spoke, debate, comment to the issue. This makes students are encouraged to participate actively, voluntarily and more independent. Since then, we have to more think, more creative.

- The teacher have noticed to forge for the student habits of groping trial and error process to find solutions and answers. In addition, stimulate creative imagination through math modeling, through diagrams, through association, comparison, through metaphor, metonymy, ... in the post office, post Vietnamese are also training teachers attention. The operations of thinking have been trained for students through each exercise by teachers For example, analysis - synthesis is widely used in all learn, in analyzing the topic, identify the problem; multiple comparisons was used in comparing the historical facts, the substance, the component elements, substances, .. in science, geography, ... All manipulations of thinking were organized for students to apply for flexibility in each lesson, each lesson (post, practice, review), by subject and characteristics of each subject in the spirit of the thesis.

- Unlike often when teachers stop at solving exercises familiar ways, according to the present model has the characteristics of creative thinking as versatility, flexibility, responsiveness, purity independent fluently and nicely trained teachers for students during school hours in various diverse forms as encouraging students to find solutions to problems, find new solutions, find a solution or unique, writing questions not just for the present sample sentence form, content only keep the structure, meaning unique and distinctive language, ...

- A new addition in the classroom, which is all students are encouraged to participate in "thinking". Group objects of average and below average students accounted for the highest number of classes generated much interest and the opportunity to develop the qualities of creative thinking. In each hour taught each academic content, teachers are to facilitate their participation most. With each exercise, hard questions, requires creativity, persistence teachers are guided, in part to inspire them to become familiar with the creative learning. Prior to problems they encounter deadlock teachers are encouraged to solve the same ... In the classroom, every student has the opportunity to develop three most basic elements of creative thinking has been mentioned on the ability their own.

+ *About the students:*

* In math: There were clear manifestations such as finding ways to solve a problem; Many of the problems have been solved by students least two ways; know how to manipulate type, shape, form to solve the problem of the type, format, sample problem (moving coordinate the manipulations of thinking, the deductive methods); known flexible application of knowledge learned in solving exercises without machines applied knowledge skills, such as how to test before. For example, when comparing two or more than two fractions, students have to apply knowing the nature of comparing fractions that may not necessarily form the same rules,... When performing all solution, students have known to lump, do step off the property, said a combination of computational skills and reasoning problems; know the nature of the application of the calculation, the typical solution method to solve a creative way;

* In Vietnamese subjects: Students have known to make sentence writing, paragraph writing an "alternative" measures combine rhetoric, desertion, add extra components, using onomatopoeia, figurative, from ambiguity rich expressiveness, originality, ...) to make sentences, lively articles; writing exercises writing the "destructive" not strictly sequential.

* In the natural sciences - social: Students have been known to apply knowledge learned in handling flexible, creative and practical situations. For example: knowing the physical separation of liquid mixtures by means other than normal; know how to use knowledge learned in solving these tasks effectively, the economy, ..

In addition, students have had the way to think, to analyze, evaluate, look at things, the issue of flexible, multi-dimensional, comprehensive, known to promote the advantages and overcome limitations when solving problems, such as: knowing splitting problem (homework questions) to solve each part with ease; aware of all the objects are linked to each other, to solve comprehensive, uniform (flexible, pliable); know to solve the problem independently; knows how to solve creative flexibility when the problems are at risk of deadlock ... (the easiest level); ...

This is the expression of a number of elements of creative thinking in students expressed little or more in the learning process and learning results after pedagogic experimentation we found. What earlier, in the process of surveying practices not found in students.

Conclusion Chapter 4

The pedagogical experiments were carried out with the aim of evaluating the feasibility and effectiveness of development measures creative thinking for students shown in flexibility, maturity and originality. Based on the analysis results obtained through experimental phase, we draw the following conclusions:

- The measures we propose are teachers of high schools and empirical evaluation confirms apply well in terms of the current elementary school.

- Pedagogical Experimental results are shown through a combination of qualitative assessment with quantitative assessment.

- + Quantitative assessment are analyzed through the monitoring and comparison of test scores before, during and after the experimental tests with regular, periodic program and test scores in mouth lessons focus on the three elements of creative thinking in students expressed. The results showed that the three elements of creative thinking of students clearly expressed in all student work in the experimental class, when the teacher's impact by developing measures specific creative thinking experimental enemies than before, while the control class, this result no variation.

- + Mark qualitative analysis through the lesson commentary, observation of behavior, attitudes and gestures of the students during school hours as well as comments received through the evaluation of experimental teaching teachers, teaching members and administrators participating school hours. The results show that there is a shift and clearly expressed the basic elements of creative thinking in students in the experimental class shown in the learning process. This further confirms the accuracy and objectivity of the feasibility and effectiveness of the measures.

Thus, the results obtained after the experiments were completed primary purpose of pedagogical experiments are proposed to test the hypothesis of the thesis science through practical teaching and testing the effectiveness, feasibility of the construction measures.

CONCLUSION

Through research and implementation topics we draw some conclusions.

1 / It should affirm that developing creative thinking for students in teaching in general, in particular as the primary teaching issues and practical imperative, especially in the context we are

renewing and comprehensive basic education . Especially developing creative thinking for students not been given due attention at the elementary level. In recent years, though the innovation of teaching method has been quite strong, but the result is still limited and can not meet up with the high demands of educational practice. Thus, research to develop creative thinking for students in teaching in elementary school is a feasible approach in the innovation of teaching method today.

2 / After the study, subjects had obtained some concrete results:

- Go deep study of theoretical issues related to creative thinking and the development of creative thinking like to clarify for students the basics of creative thinking, creative thinking of elementary students, a number of factors affecting creative thinking and training issues thinking. We think creative thinking is thinking tends to detect and explain the nature of things in a new way, or creating new ideas, new resolution not follow precedent and creative thinking has been characterized by the elements as the flexibility, maturity, uniqueness, detail and sensitivity, ... At the same time confirmed the creative thinking of elementary students basically shown most clearly on the fundamentals. Factors affecting creative thinking like imagination - Author of all creation, old things - hinder creativity, qualities of character creation is the fundamental problem may be related clear. In particular, issues such as development of creative thinking for students concept, the concept of teaching thinking, development, development creative thinking, measures and methods are developing creative thinking have been analysed, create a scientific basis for the evaluate the practical issues of teaching of developing creative thinking for students as well as building measures for developing of creative thinking for students.

- Practices developing of creative thinking for students in today's teaching show: perceptions of teachers, students to teach thinking, creative thinking, the importance of creative thinking are general and very limited; no environment is not appropriate pedagogy for teaching general thinking, development of creative thinking in particular; most teachers do not have the specific measures to develop creative thinking for students; groups of average and below average students are not interested in the development of creative thinking in learning. Reality now in primary teaching not promote creative thinking for students is considered by some cause, which is the main reason teachers do not know how to, measures and methods for training and development creative thinking for students in his teaching process. The problems of the current situation is the basis for our practice building measures for developing creative thinking for students ensure the feasibility and effectiveness.

- From the theoretical basis and practical unraveling in the subject, we constructed two measures groups developing a number of elements of creative thinking for students of end of primary school classes (grades 4 & 5). We believe that before developing a specific type of thinking (critical thinking, creative thinking, ...) for students, teachers need to create the conditions necessary to promote thinking follow a desired trends. Want to develop creative thinking for students in teaching, necessary conditions is teachers who should created to be creative environment in the classroom as well as the organization of "thinking class". Thus, in two groups of measures, the first group works to create a "base" class in which all students are to maximize the ability of the thinking itself, and on the ground "thinking class" has been created, the group 2, through measures of specialization, will help teachers create the conditions necessary to positively impact a number of factors of creative thinking for students.

3 / The building measures in empirical thesis is taught in six schools of different areas. Although short experimental period (05 months), the number of experimental subjects are not many (3 subjects), but the results are rather satisfactory, meet the research goals set out, initially confirmed

correctness of the scientific hypothesis, demonstrate the feasibility and effectiveness also the quality of the measures built-in the thesis.

4 / The development of creative thinking will associated with providing knowledge to students. It is a long process and has kept pace throughout teaching process. In addition to exploring the contents of the textbook program in the course, teachers need to design rich exercises stimulate the development of characteristic elements of creative thinking to enrich the material in teaching process.

5 / The measures we have designed, synthesized to be viewed as a "strategy" of teachers to teach in developing creative thinking for students. Since this is a guideline and performance measures global in nature, are employed to perform during teaching process with purposes developing creative thinking for students. Measures on sticking together, measure after measure followed during each pre-school and teaching process. Each measure has had the most effect on both the continuous effects, stimulates the synthesis of creative thinking for students in the learning process.

6 / The built-in measures thesis is not a lesson plan or lesson plans of teachers that are oriented ideas for teachers when designing their lesson. Depending on the characteristics of each subject, the circuit knowledge in each subject and each lesson to teachers use a measure, a few measures or all measures in all lesson plans designed for each specific lesson. In addition, measures are developing creative thinking for students used in a range of subjects and objects of students, so in each measure, teachers need to apply according to the different levels to suit each student group to promote creative thinking maximum of each individual student in the classroom.

7 / In order to better use the results of the research topic, in teaching process, teachers also need to be based on specific conditions, particularly levels of students, ... to have in order to apply appropriate badge best results. Need to coordinate measures in a flexible way according to the actual situation of his class, not necessarily sequential training methods are built, further measures should be aware of how they will fit each specific activity during the school day to most effectively exploited.

PROPOSALS

1. Should raise the awareness of teachers about creative thinking and the importance of teaching development creative thinking to students right from the primary level. Provision should be made mandatory for teachers to teach thinking. Teaching thinking here should be considered as one of the important criteria to evaluate teachers as full-time, teaching festival, implementation excellent teachers, ...

2. Should integrate trainings teaching method of thinking for management staff, teachers in regular refresher courses annually. Should integrate teaching and learning thinking posts on the teaching program (of teachers teaching materials, teacher's books, teacher's teaching plan, students' textbooks, ...). And also offers lessons about thinking is designed into separate bands. Teaching creative thinking need to make during teaching process: in each lesson, class, semester and academic year.