

Discussion on the Development of Gifted Children's Thinking Abilities in Chinese Study

Zhang Li

Beijing Yucai School

China

Abstract:

Chinese proficiency at primary school level refers to a comprehensive proficiency, including thorough observational ability and rich image accumulation; character and word accumulation preference and habit; strong memory power and flexibility in diction and sentence-making; strong comprehension analysis; an accurate grasp of text structure and other features; the ability to learn by analogy, strong migration/transfer ability; and rich association and imagination.

Strengthening the development of gifted children's ability for observation, thinking, imagination, memory, transfer, etc., creates a relaxed and harmonious atmosphere in the classroom which, in turn develops their thinking abilities, arousing active cognition, exploration and creativity. It also stimulates their sensory experiences (such as sight, touch and hearing) and increases teaching intensity in the classroom to improve learning effectiveness, thus, improving their thinking ability in Chinese.

Introduction

Chinese proficiency at primary school level refers to a comprehensive proficiency, including thorough observational ability and rich image accumulation; character and word accumulation preference and habit; strong memory power and flexibility in diction and sentence-making; strong comprehension analysis; an accurate grasp of text structure and other features; the ability to learn by analogy, strong transfer ability; and rich association and imagination, and more fluent language expression ability. As gifted children have many natural advantages, it is necessary to capitalize on these advantages to develop their Chinese proficiency. First of all, let us see what elements make up proficiency in Chinese.

I THOROUGH OBSERVATION ABILITY AND RICHER IMAGE ACCUMULATION

Observation is a purposeful cognitive process, and an active form of human cognition of objective reality. Observation ability is the ability to recognize things purposefully, completely, swiftly and in an orderly manner. The rich images obtained from observations form the basis for judgment and inference. As a thinking activity, observation connects images obtained from both current and past observations. Thus, the result of observation is a product of thinking, and the source of children's cognition of the world and their writing. Their writing ability improves with the development of their observation ability and thinking ability.

Children keep accumulating images from their observations. The more they observe, the more images they accumulate. The richer the accumulated images, the more deeply they observe,

Observation is the basis for children's study. Guide the students to observe the character patterns, pictures and surroundings carefully and in an orderly manner, and this will provide them with rich material to develop their thinking abilities. Observation is also the basis for writing. The more they observe, the deeper their thinking and the stronger their sensing. Their writing will be richer and more lively.

Although the observation ability of gifted children is obviously higher than that of normal children, their observation ability changes with knowledge and experience gained from training. It is therefore necessary for teachers to create conducive conditions for gifted students to improve their observation ability purposefully and systematically. Teach them how to observe carefully and think about the internal relations between things, to know the features, and to learn to combine observation with thinking, and keep accumulating images from in-depth observations.

II CHARACTER AND WORD ACCUMULATION PREFERENCE AND HABIT, STRONGER MEMORY POWER AND GREATER FLEXIBILITY IN DICTION AND SENTENCE-MAKING

Accumulation is the psychological internalization process of obtaining, processing and storing information, fully reflecting the key role of the thinking process. It includes language accumulation and image accumulation. The former will be emphasized here.

Language accumulation refers to the accumulation of characters, words, sentences, paragraphs, etc. In Chinese, language is stored in the form of words and phrases. The more words and phrases students accumulate, the more likely they will produce refined language. A small accumulation will affect their reading-writing ability, restrict their thinking ability and development, and influence their understanding, selection and judgment.

Memory is the precondition of human cognitive activity, and the brain's response to all kinds of things, emotions, actions, feelings and problems previously sensed, experienced, operated or considered. Studies have shown that there are 100 billion cells called neurons in the human brain, each able to build links with surrounding cells in as many as 10 000 ways. However, only the dozens of connectors called neurological synapses play a key connecting role in memory formation. Children's physiological and psychological features determine that the childhood years are the best years of language accumulation. Children always like verses with a strong tempo, as they are easy enough to recite by heart. It is easy for memories to be left deep inside as there are fewer temporary neural connections in children's cerebral cortex. Many famous writers, when talking about their achievements, give thanks to the solid foundation gained during their childhood. Therefore, language accumulation should attract special attention in the study of Chinese language teaching and learning.

Accumulate for application. Application, in turn, promotes accumulation. Thus, , they complement each other perfectly. Students deepen their understanding and improve their memory through application. However, there is no application without accumulation, as accumulation is the precondition for application. A greater language accumulation leads to ease of application, a well-developed ability in diction and sentence-making, and excellent writing. Teachers must be good at guiding students for all-round accumulation so as to enrich their knowledge.

For accumulation: read more, listen more and be diligent in recording and accumulating materials. It is better to make a classified record of things observed, read, heard, or experienced, as well as one's own feelings, to build up one's own database.

III STRONGER TRANSFER ABILITY

Confucius said, "Gain new insights through restudying old material"; "I do not open up the truth to one who is not eager to get knowledge, nor help out any one who is not anxious to explain things himself. When I have presented one corner of a subject to any one, and he must learn the other three corners of the subject from the one corner, for I cannot repeat my lessons." His insistence on active thinking and learning by analogy is perhaps the earliest thinking on learning transfer. Ye Shengtao, a famous educator, once said, "There is endless knowledge to be taught. The textbook is no more than an example, so one shall let the students learn by analogy".

Learning transfer generally refers to the influence of students' 'study experiences' on future study, and the psychological process in which they put the learned knowledge into practice. 'Study experiences' includes knowledge, experience, skills, abilities, ways of study, and behavioral habits.

From the learning transfer theory of two kinds of thinking (abstract thinking and concrete thinking), learning is a process whereby people connect current perceptions (character, symbols, images) with related past knowledge and experiences for processing, to understand or master the knowledge. These are achieved by thinking activities during the process of studying, that is, the influence of old knowledge on new knowledge determines that thinking is the decisive factor, and knowledge migration is realized through thinking. Here, there are two basic conditions for thinking: a. thinking shall have a carrier, i.e., the representation of the thing in the human brain, such as language, symbols and images; b. thinking is operable, and thinking activity should follow certain rules, regulations and methods to achieve certain purposes. Migration will be realized if new and old knowledge or experiences (two study scenes) have common thinking materials, rules, or laws of thinking. Thus, migration shall be provided with the materials of thinking, rules of thinking and the methods of managing thinking.

Gifted children can switch from one form of thinking to another and learn by analogy with great flexibility. Their thinking does not seek one right answer, but aims at flexible migration, with changes in time, place, conditions, etc. They are good at using a variety of

thinking forms. They can combine front and back, alternate domains, change directions, mix images, jump from one way of thinking to another, from one method to another, and think and solve problems from multiple angles, levels and directions.

When generalizing knowledge, the higher the level of generalization, the better it exposes the essence of those unrecognized new things of the same kind. This new knowledge is added to the existing knowledge system to successfully complete the migration process. The addition of new knowledge that has enriched the former cognitive structure results in continuous knowledge enlargement and updating. As Chinese knowledge is scattered in different textbooks, special attention should be paid to guiding students to generalize the scattered knowledge, to combine the study of basic knowledge such as character, word, sentence and paragraph with skills such as listening, speaking, reading and writing, for further high-quality and highly-effective migration.

Comparison is a commonly used method in teaching to promote active migration. As the basis of generalization, it can help students to analyse the differences and similarities in content completely, concisely and deeply, and eliminate interference between new and old knowledge and skills, to further the mastery of the essence of internal rules of knowledge and improve thinking ability. In migration training, comparison can help students to comprehend the meaning of words, completely understand the scope of word applications and recognize sentence modes, all of which will not only develop their language but also cultivate divergent thinking and problem-solving ability;; promote thinking from concrete to

abstract terms; train their flexibility to actively seek different viewpoints, and force them to think from different angles.

No matter consciously or unconsciously, the human brain always activates, connects, matches and regroups according to comparability, and this is the necessary movement of information processing. Because of this, when we appreciate art, we can imagine the curves on paper to be high mountains, waves, petals and forests; understand the meaning of words and speech, and can be personally on the scene (*Science Education and Theory of Resemblance* by Zhang Guangjian). It is not only knowledge and skills which can be migrated; feelings, emotions and attitudes can also be migrated to different contexts. Such synaesthesia can enhance the students' perceptual ability, enabling them to connect and interact between the inner world (psychological) and outer world (physical). It is because of such wide transferability that Chinese proficiency must be well-developed.

IV HAVING RICH ASSOCIATION AND IMAGINATION

Association is a way of thinking about the relationship among things as reflected in the human mind. There are many kinds of association, such as adjacency association, analogy association, parallel association, functional association, free association and so on. There is also abstract thinking association, concrete thinking association, and association combining two ways of thinking. During Chinese teaching, especially Chinese teaching at the lower grades, the main type of association is visual thinking association. Such literal approaches as metaphors, analogies and personifications apply analogy association, which can deepen the

understanding of and reveal the nature of things. The nature of free association is the free exploration of thinking, the spreading of the 'antenna' of thinking in any possible direction to find as many possible answers as possible. The more common phenomena children collect, the richer their association is and the richer the association is, the more acute the thinking will be and the more flexible sentences will be. Therefore, association is the key factor, and hence, a great deal of work should be put into reading, composition, and basic training.

As a way of thinking, association is flexible, and divergent. In the training of thinking skills, association is a weak link because of the lack of relevant experience. Only the combination of many ways of thinking, especially logical thinking, can guarantee the exactness of thinking.

Imagination refers to the process in which the human brain maintains images of objects seen,, processes them and finally creates a new image. Imagination is an artistic summary of life. Its purpose is to reflect life in a more authentic and typical way. Rich imagination is the wing to innovation. Both reforging imagination and creative imagination are beneficial to cultivating the innovative quality of students.

During Chinese teaching, much attention should be attached to developing students' imagination. Creation cannot be separated from imagination, as imagination is its foundation. Both reforging imagination and creative imagination are quite important for people's creative work and mastery of knowledge. Gifted children are capable of very rich association and imagination. Therefore, during Chinese teaching, teachers should make use of all kinds of

teaching methods, connecting practical situations to give students the training to encourage them to imagine, innovate and break the fetters of tradition.

In Chinese classes, teachers can use text training to develop students' imagination by looking for rules to stimulate the imagination. Teachers can also use pictures to guide imagination, media to help imagination, allow students to extend the ending of stories to train the imagination, and create situations to promote imagination. To train students to imagine, teachers should grasp the points to stimulate imagination as only through this way can imagination be properly stimulated. Thinking comes before imagination. Approaches such as extending thought, filling in the blanks, association, changing ways of thinking and continuing thinking, teach students to seek innovation in thinking and cultivate rich imagination among students. It is one way to cultivate students' innovative thinking to observe scenes in life, find similarities among things and finally use vivid language to express their observations and feelings.

Gifted children have many obvious advantages intellectually. Strengthening gifted students' observation, imagination, thinking, memory, and the ability to transfer will develop gifted children's way of thinking in Chinese learning. To effectively develop the thinking ability of gifted children, the following three points should be achieved:

- 1. CREATING A PLEASANT AND HARMONIOUS ATMOSPHERE IN CLASS AND STIMULATING STUDENTS' ACTIVE COGNITION, EXPLORATION AND CREATION**

Students' intellectual abilities and non-intellectual abilities are inseparable. Personal mental ability influences the psychological development of children. Only the combination of a relatively high intellectual level and good personal psychological quality can constitute a sufficient and necessary condition of character building. Studies show that students' emotions are directly proportional to their intellectual activities. The higher the intensity of active emotional increase, the higher the score of intellectual activities will be. The higher the intensity of negative emotional increase, the lower the score of intellectual activities will be.

A positive environment can have amazing effects on the thinking ability of gifted children.

So in classroom teaching, teachers should create an equal and harmonious atmosphere, which is the basic guarantee of cultivating and forming creative thinking. Only a democratic and harmonious class atmosphere can make students' body and mind pleasant, activating their thinking to the largest extent. Once thinking has been motivated, students can pursue persistently, explore boldly, and think actively. Sukhomlinski once said, "To make children well-educated, the first thing is to let them enjoy the world happily and optimistically." The real humanistic spirit of pedagogy is to cherish children's right to enjoy happiness and to make sure that with the guidance of teachers, students can have more opportunities to participate, feel, learn, understand and improve.

Teachers should participate in class as an equal. They should establish rapport with students and bridge the distance between teacher and student. When students are free and comfortable, their imagination will be stimulated, their thinking will be activated, creativity

will be promoted, and their brain will be liberated. In this situation, their ‘antenna’ of thinking will extend to the important points of texts and to the depth of knowledge.

2. MOBILIZING CHILDREN’S SENSORY ABILITY OF SEEING, LISTENING AND TOUCHING TO EXPERIENCE AND LEARN

Children have many channels to understand language. There are six main channels to the brain, namely seeing, listening, smelling, learning, touching, and doing. This tells us that some people are visual learners who like looking at pictures and photos, some are kinesthetic learners who can learn better by moving their bodies, some prefer the printed word, some like to learn in groups and learn better when interacting with others. Learning a text is more than just listening to teachers. During teaching, teachers should let students dance, taste, touch, listen, smell, look and feel. Through these ways, they can learn almost everything. Research shows that we learn 10% by reading, 15% by listening and 80% by experiencing. This indicates that experience is very important. This is the fundamental approach to developing students’ thinking and is an effective approach to improve the efficiency of teaching. Letting students use their hands and other senses can deepen their knowledge. Tao Xingzhi once said, “Liberate children’s brain and let them think; liberate their eyes and let them to observe nature and society; liberate their mouths and let them speak.” Giving students free time and space to learn, many choices to choose from and opportunities for creativity will improve their Chinese to the greatest extent. In class, students must be active participants. They can use physical activities to express thinking. For example, they can use sounds to speak and sing, use words and signs to write, use colors and lines to paint, use body, gestures and

actions to perform. The involvement of many senses will enrich students' ability to express and rebuild images and greatly improve students' reading ability. This can make images and pictures in the text gradually become clear, concrete, vivid and active, thus achieving the goal of understanding sentences and words.

The typical approaches are listed below:

1: Drawing: Let students imagine and transfer the language to pictures based on their understanding of the text. This can deepen their understanding of language and cultivate their taste and imagination, as well as develop their reading analysis ability and train their re-creating imagination.

2: Performing: Teachers set a situation, according to which students can be enlightened by the emotional language, and through re-creating imagination, their experience can be awakened and association triggered. The situation and characters in the text thus become clear. This can also activate students' interest in learning and develop their concrete thinking.

3: Operation: Before we begin, we will set up a goal in the form of an image. In the process of operation, we will set up a new image and compare it to the original image to decide the next step, until the goal is finally reached.. The combination and comparison is the processing of thinking. It is a form of concrete thinking. Therefore, after studying the text, students can practice what they have learnt, which can promote understanding. During the experimentation, students should both see and act to internalize understanding.

4: Other approaches such as feeling, tasting, smelling, singing and so on

Experience shows that when students are allowed to choose how to learn according to their interests, they will be quite interested in learning. And interest is the most effective motivation for learning. Their enthusiasm and initiative will develop to the full. The learning of students is personal and creative. Students need teachers' guidance and encouragement to learn things from multiple angles.

3. CULTIVATING THE THINKING POWER OF GIFTED CHILDREN BY INCREASING THE INTENSITY OF CLASSROOM TEACHING AND ENHANCING THEIR UNIT-TIME LEARNING EFFICIENCY

Gifted children surpass normal children in observing, memorizing, understanding, analyzing, synthesizing, and transferring information, and unit-time teaching intensity should be enhanced to produce better learning efficiency.

1. LITERACY TEACHING

“Human intelligence begins with literacy.” Literacy is the basis for learning. Even though they are prodigies, we find that these children's thinking in their preliminary stage of primary schooling is still of the concrete type. While many gifted children are precociously able to read before they start school, not all do. Take the People Education Press's primary school language course book one. In a pre-schooling test, 91 children from a gifted class can recognize only less than 50% of the 400 new characters.

Character-learning is tedious. If greatly pressed, the development of children's thinking may be reduced. So at the beginning of a character-learning class, the teacher should present a series of animations showing the evolution of the characters from image to

pictographic and to modern form, thus creating a certain mystique so that their interest can be aroused.

In teaching literacy, teachers should introduce to the students, through the example of some commonly seen ones, the six categories of Chinese characters, viz pictographic (as in“日”and “月”), indicative (as in“上”and “下”), associative compounds (as in“休”and “明”), pictophonetic (as in“妈”and “草”), mutually synonymous, and borrowed, though the latter two are sometimes considered as only using methods. From comparing image and character to gradually understanding the relation between its form and meaning, the process brings the students’ attention to how the character has evolved and what meaning it has. From this active exploration, he gets not only the pronunciation, the strokes and the form of the character but also knowledge about it. With this background knowledge, the student can have a better grasp on the character’s form and meaning. Thus we have a new character learning method - clustering.

In this method, one associates many somewhat related characters with a certain character, based on his understanding of word formation and his knowledge of common single-element characters and radicals, so as to get to know more characters in a given time and master their meanings by noticing the radicals. For example, if one knows the meaning of “青”and also knows that “日” stands for "sun", “目” stands for "eye", “虫” for "vermin"; “心” for “mind”, “氵” stands for "water"; “艹” for “herb” and “讠” for “language”, he can infer the meanings of “晴”, “睛”, “蜻”, “情”, “清”, “菁” and “请”. This especially works for characters of

similar form. Again, when one knows the meaning of “扌”, he will understand that “拍”, “打” and “推” are actions by the hand even if it is his first time seeing these characters. By using this method, the number of characters one learns in a given time (such as a 40-minute class) will double or even triple. The student’s memory of the forms of words deepens, and he can remember more characters in a time unit and he now can better distinguish between words of similar form and similar pronunciation for phrase-forming. The intensity of teaching is enhanced while the efficiency rises. In line with the characteristics of the Chinese characters, this method simplifies the thinking process, reduces memory burden and advances the positive migration of thought, and is thus a good cognitive strategy.

The unique feature of Chinese characters, interweaving pronunciation, form and meaning, means that once one knows the general formation rules and the basic radicals, by following the migrating rules, students can learn Chinese characters on their own, independent of help from their teachers.

2. THE SYNTHESIZED APPLICATION OF LISTENING, SPEAKING, READING AND WRITING ABILITIES

In the teaching process, listening and reading form the ability-forming process in which understanding of a passage is attained mainly through analysis, while speaking and writing make up the ability-consolidating process in which a certain idea is expressed through a certain phonetic and linguistic form. An opportune migration expressing the understanding acquired in the listening and reading process can be conducive to the coordinated

development of students' multi-faceted knowledge and skills and can consolidate their learning performance. In cultivating creativity in students' expression, emphasis should be placed on cultivating their creative thinking and creativity, which can be attained by combining writing into the reading process.

To do this, the drills on sentence-making are the more elaborate part, where a student's knowledge is turned into ability. A sentence is the basic unit of a passage, and since drills on characters depend on sentences and well-structured sentences form passage, it is also the most important part of the character-phrase-sentence-passage hierarchy. In a word, sentence is the key, in the light of either the migrating principle or passage-forming process. Although the Chinese language is deeply complicated and writing styles are diverse, the number of basic sentence types is just about 20 or 30. On the other hand, there are some natural sides in children's language ability, which means there is a certain "critical period" for one's language learning curve. Therefore, by doing the drills in the fundamentals through the migration theory, gifted children's language acquisition can be more efficient.

The learning of “sentence” in a classroom consists of:

1) Mastering the basic sentence structures. Deepening one's feelings for and understanding of sentences through a large amount of exercises on the subject and object parts of the sentence by padding them.

2) Drilling in the “four-element” sentences.

“Four-element” sentences are those sentences that include all the four elements in a narrative, i.e. time, venue, character, and event.

The specific form is "when (time) who (character) where (venue) what (event)". It can also be "who when where what", "what when where who"? exactly the same as previous or "when where who what". When one has mastered the way this type of sentence evolves, migration is easy.

3) From sequential observation to sequential expression. Sequential expression comes with sequential thinking after sequential observation. Sequential observation is from far to near, from up to down, from inside to outside, from inner to outer, from scenes to people, from people to scenes or the sequence in occurrences. A student should be able to use adverbs of time sequence like "先(at first)", "再(then)", "然后(after that)", "接着(following that)", "最后(at last)". With repeated drills, the students will be able to generalize the rules, and thus realize accumulation of knowledge and migration of skills.

Unlike other subjects, in a Chinese class, the formation of abilities can hardly be attained by the learning of dozens of passages; extended extra-curricular reading is needed. Only through long term knowledge accumulation and language practice and by combining and fusing what

one learns in class and out of class can these abilities develop. The accumulating process brings about an increase of vocabulary and the development of the sense of the language. With rich accumulation unknowingly comes understanding, and hence the ability to compare and appreciate. In the actual class, the teacher first gives a detailed explanation to a passage and then hands out several other passages of similar structure so as to allow what the students' learn from the passage to migrate. The teacher should also try to inspire his students to observe, analyze, compare, research, and innovate, to learn how to learn, to learn how to discover, and to flexibly migrate laws, rules, and principles in the bid to cultivate their linguistic abilities.

There exists great potential for the development of gifted children's thinking capacity, and how to maximize this is a long-standing task. What is written above is some of my thinking. It is not thorough, and some of the practices also need further consideration. We can only hope that through constant practice, all these will come 'full-feathered' in time to come.

References

1. Wen Hanjiang & Lian Ruiqing. ed., *Developing the Right Brain: Theories and Practice in Developing Concrete Thinking*. Zhejiang Education Press, Zhejiang 1997
2. Jane Houston, "Educate the Possible Human Beings" & "The Global Village Is Acting". Quoted from Gordon Dryden's *The Learning Revolution*. Shanghai Sanlian Publishing House, Shanghai 1998

3. Ma Xinlan, ed., *Observation, Reading and Primary School Compositions*. Beijing Science and Technology Press. Beijing 2006
4. Sang Haiyan, ed., *Exercise Reforms and Research-based Homework in Primary School Language Class*. Beijing Science and Technology Press, Beijing 2006
5. Wen hanjiang, & Chen Aibi, *Maximizing the Development of Juvenile Intelligence: Theories in Two Thinking Types*. Beijing Science and Technology Press. Beijing 2006
6. Wen Hanjiang & lian Ruiqing. *Creating Primary and Middle School Educational System*. Beijing Science and Technology Press, Beijing 2006
7. Shi Jinanong & Xu fan, ed., *Psychology in the Development of Gifted Children*. Anhui Education Press. Anhui 2004
8. Zha Zixiu, ed., *Exploring into the Development of Gifted Children: Proceedings at the 20th Anniversary of the Research on the Mentality of China's Gifted Children*. Chongqing Press, Chongqing 1998
9. B□A□Cyxomjnhcknn, *Suggestions to Teachers*. Educational Science Press. Beijing 1984