

Implications of the "Critical Period Hypothesis" in Second Language Acquisition for English Teaching

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Abstract: Second language acquisition (SLA) is one of the branches of linguistics, and research on SLA and English language teaching in China has been fruitful since its inception in the early 1980s. In this paper, I aim to examine the advantages and disadvantages of the Critical Period Hypothesis from the perspective of English education, to take the best of it and remove the worst of it, and to apply its useful insights to English teaching, so as to better guide learners in their language acquisition.

Keywords: Second language acquisition, English language teaching, The Critical Period Hypothesis.

1. Introduction

In the process of language acquisition, linguists find that the process of children acquiring their mother tongue is like the process of natural growth of plants. As long as proper language nutrition is given, they can master their mother tongue without effort. In the process of second language acquisition, it is surprising to find that children also have talents, especially in the mastery of pronunciation, intonation and vocabulary.

The Critical Period Hypothesis was first proposed in 1959 by Montreal neuroscientists Wilder Penfield and Lamar Roberts in their paper "Speech and Brain Mechanisms". In 1967, Eric Lenneberg again discussed the "critical period hypothesis" in *The Biological Basis of Language*, which gained widespread attention. Numerous studies have also shown that critical periods do exist for language acquisition, but there is no consensus on the exact time period. All in all, second language acquisition cannot be separated from the factor of age. The more properly people grasp the critical period to learn the second language, the closer their second language level will be to that of the native speaker.

Given that the critical period hypothesis has been shown to be helpful for learners to learn second language, my research will focus on how to apply the advantages mentioned in the critical period hypothesis to teaching English to children. In my research plan, I intend to first analyze the pros and cons of the "Critical Period Hypothesis", apply the beneficial insights to English teaching, and then get reflections from the cons so that teachers can avoid them in the teaching process. The purpose of my research is to help children better develop their language skills at an appropriate age and to master a second foreign language more effectively and easily.

2. Literature Review

Lenneberg first proposed the concept of critical period in language acquisition, and he studied language from a biological perspective. A question raised by Lenneberg (1967) is: why do children generally begin to speak between the ages of one and a half and two and a half? He believes that speech needs a certain biological basis, and that the time children begin to speak is the result of biological maturity. He points out that the major events of language acquisition are always

linked to other events of physiological maturation (standing, walking, etc.), and they have a synchronous relationship. Another important factor affecting children's language acquisition is brain development. The human brain develops rapidly after birth, reaching 60 percent of its maturity by about two years of age. Around puberty (around age 13), the brain reaches 100% maturity. The brain essentially loses its plasticity after puberty. Therefore, Lenneberg believes that natural language acquisition can only occur during the critical period between age 2 and adolescence. During this period, language acquisition is easiest due to physiological factors, and beyond this period, language acquisition ability is limited by a rush. According to Krashen (1973), the age of 5 is the peak of the development of language potential. Although scholars have different opinions on the critical period, it can be seen from various opinions that the critical period of language acquisition generally refers to the period from birth to adolescence, with 1-5 years of age being the most critical period. The followings are the literature review based on the critical period hypothesis.

2.1. Theoretical research on the critical period hypothesis

A critical period is a period of time in an organism's life during which certain external conditions can influence the organism to a greater extent than they can at other times. The "critical period hypothesis" was put forward in 1959, and has been discussed by linguists since its birth, and has been widely concerned until today. From the perspective of brain plasticity, neurophysiologists Penfield and Roberts proposed that the age of ten is the best age to learn language. Lenneberg (1967) systematically explained the theory of the critical period of language acquisition from the perspective of neurophysiology based on medical clinical experience. He believed that the human brain began to be edgified at the age of two, and before the lateralization was completed, the human brain would learn language with the whole brain. From about 11-19 years old, the brain would complete lateralization, and from then on, the left side of the brain was mainly responsible for language learning. The language learning of the brain after lateralization is not as good as that of the whole brain. Therefore, language acquisition best starts before the brain has completed lateralization, which is known as the critical period of language acquisition.

2.2. A case study of the critical period hypothesis

A favorable demonstration of the critical period of language acquisition is the case of Genie (MEL Paenice & Wang Zhichao, 1983). Genie's father is extremely cruel -- 20 months after her birth, her father imprisoned her alone, isolated from the rest of the world. No one spoke to Genie until she was freed, and even as soon as she made a sound, her father beat her. By the time she was rescued at the age of 13 and a half, Genie had missed the critical period of language acquisition. Genie's case proves that human language acquisition also has physiological properties. If we miss the optimal period of language acquisition, we will begin to enter the degraded period of language acquisition, which is not conducive to language acquisition. For the existence of critical period of language acquisition, the "Wolf child case" in psychology is also a proof.

From the above examples, it is not difficult to see that there is a crucial period in the early development of children, namely the critical period. Correct education must be given to children in the childhood stage to achieve good educational effects, and often will receive twice the result with half the effort. This indicates that age plays a significant role in second language acquisition.

2.3. The implication of critical period hypothesis to English teaching

Linguists at home and abroad still have doubts about the critical period hypothesis, that is, we need to analyze the advantages and disadvantages of the critical period hypothesis in this research proposal, but cannot take the critical period hypothesis as edicts. GUI Shichun (2000) pointed out in his book *Psycholinguistics*, "It is difficult to give a definite answer about when is the best age for foreign language learning. Therefore, we cannot simply give a conclusion about whether there is a critical period. Instead, we should study the characteristics of different stages of learning and then apply them to teaching comprehensively." In second language teaching, teachers should flexibly use the advantages of the critical period hypothesis in teaching, so that children can master a second language efficiently and easily.

2.4. The reasonableness of the critical period hypothesis

The critical period hypothesis has its reasonableness. As cognitive and linguistic subjects, human development from embryo to adult, in essence is the formation of the brain neural differentiation and the process of development and function eventually decline, from the macroscopic longitudinal structure of view of human evolution, brain development has experienced three phases -- sensory-motor, limbic-presentational and asymmetric (Zhan Yanfang, 2001), and from the human in terms of the microscopic horizontal process of individual physiological development, it also goes through the development process from egg to other mammals with similar appearance and finally to baby. Moreover, the development characteristics of IQ and cognitive ability from newborn to juvenile and then to adult also reflect the evolution process from low to high, thus reflecting the biological common characteristics of human as "animal".

Engels' *Dialectics of Nature* (1870s) holds that "the spiritual development of children is a miniature of the intellectual

development of our animal ancestors". According to the general view of cognitive linguistics, language, like cognition, reflects the objective world. Language is based on cognition, and cognition exists before language. At this stage, children who have been naturally equipped with external features such as color, shape and sound to identify various situations have strong internal needs such as seeking an effective way of social expression to better accept and communicate their needs and feelings. In other words, the "feeling and thinking" under "babbling" generates the internal driving force to seek "language". Meanwhile, research shows that children are young the language plasticity of children is the strongest, and the brain synapses increase sharply at the age of 11 or 12. After adolescence, the cerebral cortex develops and takes shape, and the mode of thinking and language expression is basically solidified, so the plasticity tends to weaken, and the ability and effect of language acquisition are significantly reduced.

Through relevant empirical studies in China and the West, it is found that learners of European languages such as English and French and non-Indo-European Germanic languages such as Chinese all experience roughly the same second language acquisition process. In terms of foreign classic research results, Johnson and Newport (1989) selected the experimental subjects as American immigrants whose native language was East Asia, aged from 3 to 39 years old, who had been exposed to an English language environment for 3 to 26 years (average 10 years). At the same time, a group of native English speakers were used as the experimental control. It is found that there is no significant difference between the English ability of immigrants in the United States before the age of 7 and that of the Americans who are ten years old and ten years old. On the contrary, the English ability of immigrants in the United States decreases with the increase of age. Therefore, western experimenters attribute the English learning differences before and after the age of 7 to physiological differences, and hold a positive attitude toward the "critical period hypothesis" of second language acquisition. In terms of domestic research results, it is found that college students' English listening and speaking ability is positively correlated with their growth quality in the critical period of their first language acquisition, so the "critical period hypothesis" is reasonable.

3. Research Methodology

With reference to this chapter, one can acknowledge the research process of the thesis. The following sections cover the research questions, the grouping of students; parents whether to seize the critical period to develop children's language ability and the results.

3.1. Research question

The following questions are to be answered.

- (1) Is the critical period hypothesis the key for children's learning second language in their 4-5 years old?
- (2) Is the results of two groups really due to the critical period hypothesis?

3.2. Participants

The test was conducted on 4- and 5-year-olds. Draw two groups of children, the first group are good at foreign languages, others do not do well in foreign languages. Each group consists of 5 people. There will also be a questionnaire,

mainly about their second language level, and whether they had lived abroad.

3.3. Research Instrument

Lenneberg(1967) first proposed the concept of critical period in language acquisition, and he studied language from a biological perspective. Previous research found that 4- and 5-year-olds did score higher on foreign language tests among their peers if their parents focused on their children's foreign language learning, and they took the critical period to develop their children's language skills. This study will also produce a set of foreign language test papers that meet the target subjects' abilities. We'll discuss the results when the scores come out.

3.4. Data Analysis

The data showed that, indeed, it was the group with the best foreign language skills that had the highest average test scores, and that the children in this group also had grasped the critical period to develop their foreign language skills. However, there were also some higher test scores in the group that was originally weak in foreign languages. They may have guessed the answer right.

4. Limitations

With the deepening of research, more and more scholars have raised doubts about the "critical period hypothesis" of second language acquisition, and relevant surveys and data also provide support for similar doubts from one side. The time interval and boundary point of "critical period" vary from person to person, rather than 6 years old, 7 years old or 9 years old, which is often defined at the beginning. Therefore, some domestic scholars have redefined this western academic import as "critical period", in order to clarify that it has certain relatively uncertain characteristics, so that it varies from person to person, time to time and place to place. In addition, from the aspect of speech ability, the study found that "infants at 10-12 months have begun to change their speech discrimination ability, and their ability to distinguish those sounds that do not belong to their own language environment has begun to decline, which means that the critical period of speech acquisition appears very early, and the so-called 'critical period' of language acquisition modules is not synchronized and inconsistent." Therefore, it can be seen that there is a certain one-sidedness of research and observation in the general positioning of the cultivation and starting stage of the main second language ability in people's life at the age of five or six, which cannot explain the rich diversity of language practice as a complex system.

5. Conclusion

Therefore, for the critical period hypothesis, we should avoid its disadvantages and use its advantages in second language teaching. GUI Shichun(2002) pointed out in Psycholinguistics that it is difficult to give an exact optimal age for foreign language acquisition, but he also put forward a new thinking angle, that is, to focus on the characteristics of different stages of learning and apply them to foreign language teaching. This viewpoint of GUI Shichun avoids the crux of previous research, and the combination of research and teaching in the critical period of second language acquisition opens a new situation and direction of research. Dai Weidong and Liu Zhenqian also hold the same view.

Therefore, we need to formulate a second language teaching plan according to different populations and individualized measures. First of all, guide young learners correctly. For younger learners, including children and lower grade students in primary school, exposing them to English early does have a positive impact on their later learning, but effective methods must be taken to ensure the quality of English teaching. First of all, we should choose simple and easy to understand content, such as daily conversations, nursery rhymes, etc.; Secondly, make full use of children's lively and active age characteristics, arrange some children's favorite games, edutainment, learning in fun, cultivate students strong interest in English learning and better learning habits; Thirdly, professional training of teachers is absolutely essential. The solid professional quality of the teachers, especially the accurate pronunciation can ensure that the children can be better guided, for the future deeper learning to lay a good foundation. For adult learners, teachers should encourage them to build up their confidence. The first step is to have the confidence to overcome your laziness and fear or resistance to English. When Mr. Marx was more than 60 years old, he only spent 6 months to learn Russian. This example is very encouraging for older learners, showing that it is feasible to learn English systematically according to the grammar rules of English. Secondly, choose the right learning method. Learners can choose their own learning content according to their own needs, and make learning plans and goals according to their own conditions. In a word, we should try our best to develop our strengths and avoid our weaknesses to improve our learning efficiency. Age is definitely not a barrier in English learning. As long as you have confidence, perseverance and proper learning methods, it is not difficult to learn English well.

6. Solution

The above studies are based on theory and empirical evidence, with high credibility and practicability, worthy of our learning and reference. In the teaching process, teachers should make full use of the theoretical knowledge of second language acquisition to help students correctly understand the critical period theory, overcome the ideological limitations of this hypothetical theory, and make students' English level constantly reach a new peak. The problems involved in the study of English teaching touch on the essence of language acquisition. In order to do well in English teaching at all stages, teachers should fully understand and master some theoretical knowledge of second language acquisition, and use it to guide their teaching practice, ensure the teaching quality at this stage and lay the foundation for the next stage of teaching. Only in this way, can English teaching in our country be improved effectively.

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