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THE CRITICAL PERIOD HYPOTHESIS: A CONVENIENT EXCUSE OR A REAL BARIER FOR ADULT LANGUAGE LEARNERS?

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Abstract

Age holds a significant role in second language acquisition (SLA). Several research shows that the ability to learn a second language decreases when someome gets older. This study reviewed relevant studies on the effect of age on second language acquisition in order to achieve the best results since language learning methods should be adapted to the learner's age level and specific needs. The results explained that younger learners are more adept at mastering a second language due to their brain's plasticity, which allows them to learn new information quickly. They can easily acquire the language's grammar, vocabulary, and prnounciation through immersion and exposure. As learners age, their ability to learn a second language decreases. After adolescence, the brain becomes less plastic, and the acquisition of second language becomes more challenging. Research also pointed out that language also has a positive influences on a country's economic development, as well as improving the international relations of local entrepreneurs. However, adult learners can still learn a second language, but it may take more their time and effort. Moreover, the learning strategies and motivation that learners applied in learning the second language also play an important role in second language acquisition (SLA). Beginners may not have a solid motivation to learn a second language, while adult learners may have a stronger motivation due to professional or personal reasons. Age is a crucial factor in second language acquisition, but it is not the only factor that determines the success of language use. The learner's learning strategies,

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exposure, and motivation to the second language also play a significant role in the acquisition of a second language.

Keywords: Age, Second language acquisition, Critical Period Hypothesis

INTRODUCTION

Learning a second language is a complicated process that takes into various number of variables, including the learner's age, motivation, native language, experience, and cognition. Since it enables educators and linguists to modify their teaching plans and approaches to fit the individual needs of children at various periods of life, an understanding of language acquisition is crucial (Troike & Barto, 2017). Motivation, cognition, experience, native language, and age are all factors in second language acquisition (SLA). Knowing this complexity enables teachers to modify their lesson plans to fit the individual needs of each student at various stages of development. Given its effects on cognitive development, language learning abilities, and the development of fluency and pronunciation similar to native speakers, age stands out as a crucial component in this process (Ozfidan & Burlbaw, 2019). The subtleties of age's impact on SLA have long known in language learning. when learning a language. By investigating these age-related aspects, we can increase our understanding of language acquisition and provide better support to individuals beginning the path to bilingualism. Additionally, studies indicate that age has a significant impact on how people pick up a second language. Age can impact a learner's cognitive abilities. skills, drive, and exposure to the second language, all of which might affect the learning process (Hu, 2016).

In fact, the beginners have been demonstrated to have an advantage in aiming the second language. This is because kids have a more fluid and malliable brain, which enables them to pick up the language abillities more easily than adults. Children's brains are still developing and growing, children are more open to learning the new things, including language (Chen, Zhao, Ruiter, & Huang, 2022). Children can practice speaking the second language without worrying about embarrassing themselves because they are also less self-conscious about making mistakes. However, studies indicate that there is a critical period for language acquisition, and that after this time, learning a second language becomes more challenging. However, studies indicate that there is a critical period for language acquisition, and that after this time, learning a second language becomes more challenging (Gualtieri & Finn, 2022).

Although some scholars contend that it may last until the age of eighteen, this crucial time is generally thought to occur before the age of twelve. Following this crucial time, the brain's ability to absorb languages diminishes, making it harder for people to become proficient in a second language on par with native speakers (Dey, Amelia, & Setiawan, 2024). Age has a big impact on the process of acquiring a second language. earlier students usually have an innate ability in acquiring the language because their brains are more flexible and receptive to new linguistic patterns (Al-Khreshes, 2022). However, this does not mean that older ones are less able to succeed. With the correct motivation, exposure, and practice, older adults can still speak a second language with a high level of proficiency. The secret to success is still unwavering perseverance and a dedication to the learning process, even though the road may differ for each age group. This demonstrates that language acquisition is a continuing undertaking that is accessible to everybody. Adults possess a wider range of knowledge and more life experience, which can aid in their comprehension and acquisition of the cultural facets of a second language (Hartshorne, Tenenbaum, & Pinker, 2018). Furthermore, older students may have more chances to practice the second language in authentic contexts, including the workplace or when traveling, which can improve their language proficiency (Rahman, Pandian, Karim, & Shahed, 2017).

In general, when learning a second language, the learner's age is a crucial consideration. Older learners can still reach high levels of proficiency with the correct exposure and motivation, even if younger learners may have an edge in language acquisition. For the best results, language learning techniques must be tailored to the age and individual requirements of the learner. Since every student is unique in their cognitive abilities, linguistic backgrounds, and motivations, a one size fits all method of teaching languages could not work. Interactive, enjoyable teaching strategies that encourage young students' interest and inventiveness are usually advantageous. Conversely, older pupils may require more structured, analytical methods that capitalize on their cognitive development.

METHODS

This study was conducted as a accumulation of literature review or also known as library research that focused on the correlation between age and second language acquisition. The data was gained from research articles that had been published at any period in indexed international or national publications. According to the definition of library research that

explained by George (2008), this method is a type of research that collects data by learning and comprehending data with a close connection to the problem from theories, books, documents, etc. Moreover, The authors explained the thorough process used to determine the results and deal with the current study issue. In addition to outlining the expectations, the authors will go into great depth about the specific methodological processes that were crucial in forming the current study.

Several steps were taken in order to carry out this library research using George's (2008) approach. The first step was selecting the research topic. It addressed the relationship between second language the second step involved developing the research questions. The third phase was selecting a research approach, which included reading books, papers, websites, and other sources like earlier research to skim and browse pertinent material about the research topic. Selecting the database to search in order to locate resources was the fourth stage. The researcher identified the study resources using a variety of databases, such as Books, National Journal recognized by Sinta, International Journal accredited by Scopus, and Google Scholar. The sixth step involved carefully reading and understanding the sources. The researchers focused on the relationship between age and second language acquisition, including the age level of acquisition, second language acquisition, the critical period hypothesis, the differences between young and old learners based on age, and factors that affect second language learning. The last step involved reading critically to draw conclusions from the sources. The eighth step involved writing the report's article draft, which was followed by the selection of conclusions based on the theories provided that had already been developed in the article.

Literature Review

The objective of this study is to conclude the most important factors and aspects for Second language acquisition (SLA) by examining various emotional, cognitive, and demographic variables. These variables include aptitude, disposition, and additional statistical components. Although aptitude and attitude are important factors in learning a second language, they are unrelated. Many studies have examined the connection between SLA and age. The result of the review pointed out two major perspectives they are critical period hypothesis (CPH) and sensitive period hypothesis. It also mentions that there is still disagreement on the CPH, with some research finding no conclusive evidence in favor of a

biologically determined ideal time frame for language acquisition. It notes that while some research indicates the key period may conclude around puberty, others believe it may last until the mid-20s or later. While the method section does not explicitly state the new findings, it can be inferred that this study aims to contribute to the ongoing debate by providing a comprehensive analysis of the existing literature. Apart of age as a main factor in acquiring the language acquisition, a research stated that time becomes the one of factors that holds a crucial role in language acquisition. Regardless of age, the study highlights the need of spending time in a foreign language context for language acquisition. In the context of the CPH, this might be a fresh viewpoint. The study might have also looked into differences in the suggested length of the critical period, which would have added to the body of knowledge already available on the subject. It looks more closely at each of these factors to find the ones that can improve students' language learning outcomes.

Stage of Age in Acquisition Levels

A learner's age is one of the important factors affecting the process of second language acquisition. Lumentut & Lengkoan (2021) define language acquisition levels, which are frequently referred to as a child's language development patterns or stages. The following are the four stages of language development that this study identified:

a. 0.0-1.0 years old (*The Babling Levels*)

During this process, a youngster generates increasingly complex sentences. A child between the ages of six and ten months must deal with this. Children in this stage begin by practicing their vowels, making their way up to the unrounded front vowels (ee, eh, ay...) from the round, rear vowels (oo, oh, ah, etc.). Syllables can be formed by combining the first three consonants-h, m, and b-with the vowels. P, t, d, n, w, f, v, and y are soon added. They add the letters k, g, and ng a little later. After that, they begin adding s and z. Babies take a little longer to learn the famed th, sh, ch, and j sounds. L and R are the final sounds. As a result, you hear them pronounce words as strangely as possible. Soozies for shoes, fis for fish, and so forth. However, remember that their perception is far more than their articulation. They won't tolerate you mispronouncing words, but they won't be able to say them.

b. 1.0-2.0 years old (*The Holophrastic Levels*)

after babbling, children move into uttering their first words (holophrastic stage). This occurs around one year of age but can occur much earlier or much later (Steinberg, 2001). Steinberg (2021) explained Children can be said to have learned their first word when they have

capability to utter a recognizable speech form and when this is done in conjunction with some object or event in the environment. By 12 months, the majority of children can produce three or four words and comprehend thirty to forty, according to Boeree (2003). Once more, some children comprehend and even use up to 80. The number of words understood increases to 50–100 by 14 months, and even the slowest 1/4 may understand 20–50. Most children can independently produce 25 to 50 words and comprehend hundreds by the time they are 18 months old. The characteristics of holophrastic stage are overextension and underextension (Boeree, 2003). For example, the word "hat" can mean just about anything that can be put on your head, a "goggie" applies to just about any animal. On the other hand, sometimes kids engage in underextension, meaning that they use a general word to mean one very specific thing. For example, "baba" may mean MY bottle and my bottle only, and "soozies" may mean MY shoes and no one else's.

c. 2.0-2.6 years old (*The Two Word*)

By this time, the kids had just begun to use two words. A discourse composed of these two words may initially appear to be like this: [Su] (meaning milk) I want to drink milk, mom. Finally, it would truly speak two syllables, like "Ma Su," which would mean "Mom, I want to drink milk."

d. 2.6-3.0 years old (*The Beginning of Gramar*)

In the early years of life, the child's grammar began to employ increasingly complicated words, including afiction. Speech often uses sentences that contain only the primary word and no terms of duty. Sentences that are similar to telegram sentences can therefore also be referred to as telegraphic sentences (telegram sentences). In addition to the four advanced stages already mentioned, Lumentut & Lengkoan (2021) also incorporate four more advanced stages that are more in-depth and in line with the findings regarding the linguistic process that takes place in the actual children. These stages are also rhythmic with the cognitive development of the children.

a. Birth until 2.0-3.0 years old (*Sensorimotori levels*)

During the sensorimotor stage, children develop cognitive skills through movement, touch, and other actions like looking, listening, and sucking. They also learn about their environment and develop an understanding of cause and effect. The first two years of a child's life are usually when the sensorimotor period occurs. The child's realization of the distinction between their surroundings and self marks it. They will then employ their senses

to gather information about their surroundings and themselves. According to Swiss psychologist Jean Piaget, who created the idea of intellectual development, infants at this stage gain knowledge about the world through seeing, touching, sucking and feeling. Children that are in the sensorimotor stage frequently experiment with their senses in a variety of settings and ways. Rapid cognitive growth is a defining characteristic of this time. Learning the concept of cause and effect is another significant characteristic of the sensorimotor stage. When a youngster realizes they can manipulate objects with their hands and comprehend how their physical activities impact their surroundings, they are grasping the concept of causality. The subsequent awareness of object permanence requires a fundamental understanding of causality (Pakpahan & Saragih, 2023).

b. 3.0-7.0 years old (*Pre-Operationage levels*)

The child's thinking during this stage is pre- (before) cognitive operations. This means the child cannot use logic, transform, combine, or separate ideas (Piaget, 1951, 1952). The child's development consists of building experiences about the world through adaptation and working towards the (concrete) stage when it can use logical thought. During the end of this stage, children can mentally represent events and objects (the semiotic function), and engage in symbolic play. The five key behaviors children during this periode are: Imitation, Symbolic play, Drawing, mental imagery, Verbal evocation, of events. The primary function of speech at this age is to externalize thinking, rather than for communication. Children may talk in a stream of consciousness and develop more sophisticated language skills as they move through this stage.

Piaget believed that children remain egocentric throughout the preoperational stage. This means they cannot understand that other people think in different ways to them or that events that take place are not always related to them.

c. 7.0-12.0 years old (*Concrete Operational levels*)

Piaget theorized that at this stage, children further develop and master abstract thought and become less egocentric. They can now understand that events do not always relate to them and that others have different points of view. Children also become able to apply logical, concrete rules to physical objects. However, they cannot yet do the same thing for abstract concepts. The concrete operational phase centers around three elements : conversation and reversibility, classification and seriation.

d. 12.0-adult (*Formal Operational levels*)

In this final stage of cognitive development, children learn more sophisticated rules of logic. They then use these rules to understand how abstract concepts work and to solve problems. The child can analyze their environment and make deductions. They can create theories about what is possible and what might happen in the future, based on their existing knowledge. This is known as hypothetical-deductive reasoning. It is an essential part of the formal operational stage. It allows someone to consider "What if?" A person with this skill can imagine multiple solutions and potential outcomes in a given situation.

Table 1 Piaget's Four Stages of Cognitive Development Outline

Stage	Age	What happens
sensorimotor stage	0 to 2 years	Babies start to build an understanding of the world through their senses by touching, grasping, watching, and listening. They also begin to develop a sense of object permanence, which means they understand that objects exist even when they cannot see them.
preoperational stage	2 to 7 years	Children develop language and abstract thought. This means they can think about concepts and ideas that are not physical. They also begin symbolic play ("playing pretend"), drawing pictures, and talking about things that happened in the past.
concrete operational stage	7 to 11 years	Children learn logical, concrete (physical) rules about objects, such as height, weight, and volume. They also learn that an object's properties stay the same, even if the appearance changes (e.g., modeling clay).
formal operational stage	12+ years	Adolescents learn logical rules to understand abstract concepts and solve problems. For example, they may understand the concept of justice.

Source : https://www.medicalnewstoday.com/articles/325030

Critical Period Hypothesis

In the context of second language acquisition, the Critical Period Hypothesis might be used. It applies to adults or children who are native speakers of their first language and are attempting to learn a second. The CPH's key source of evidence for second language acquisition is comparing the capacity of older learners to acquire a second language to that

of children and adolescents (Siahaan, 2022). In comparison to their older colleagues, younger learners have a comprehensive mastery of the language. Although adults can achieve high levels of skill in a new language, they frequently retain a foreign accent, which is uncommon among younger learners. Because of the role of the neuromuscular system in speech pronunciation (Abrahamssoon & Hyltenstam, 2009).

Adults are unlikely to develop a native accent because they have passed the essential phase for neuromuscular function learning. However, there are certain exceptions to the rule, such as adults who become nearly native speakers of every aspect of a second language (Bald, 2007). Researchers have so found it challenging to discern between correlation and causation. Some people argue that learning a second language is exempt from critical period hypothesis (CPH). Other elements including effort, the learning environment, and the amount of time spent learning have a bigger influence on a learner's performance than age. Here are the key takeaways from the Critical Period Hypothesis (CPH):

a. Adolescence, which usually lasts from the age of two to puberty, is considered to be the important stage.

b. New synaptic connections can emerge because of the brain's increased neuroplasticity during the key period.

c. The theory was first proposed by Eric Lenneberg in 1967.

d. The CPH was directly supported by the instance of Genie, the feral youngster.

e. The CPH is supported by the challenges adult learners face when learning a second language.

The Sensitive Period Hypothesis

There is an ideal window of time when people are most open to acquiring languages, according to the Sensitive Period Hypothesis (SPH) in second language acquisition (SLA). The hypothesis states that younger learners, particularly those exposed to a second language during childhood, are more likely to attain native-like competency in pronunciation, grammar, and fluency, even if it recognizes that learning a second language (L2) can occur at any age. This theory holds that early childhood is a time when the brain is still more responsive to linguistic input, enabling more effective language acquisition. It becomes more challenging to attain the same degree of expertise as people age because their brains become

less pliable. This theory is consistent with research that clearly favors younger students, especially when it comes to learning proper pronunciation and grammar (Johnson & Newport, 1989).

Nevertheless, there is increasing awareness that age is not the sole factor influencing performance in SLA, even in spite of the data bolstering the Sensitive Period Hypothesis. Even in adults, factors like exposure, motivation, and the caliber of language input can have a big impact on language acquisition. With the correct circumstances, such as immersive settings or strong social integration, older learners can still attain high competency in L2, even if younger learners may have a neurobiological advantage (DeKeyser, 2000). Therefore, the SPH highlights the significance of comprehending the intricate interactions between age and other contextual elements in the SLA process, without completely discounting the possibility that older learners could acquire a second language.

Brief Review of Critical Period

The Critical Period Hypothesis (CPH) has been a subject of considerable debate in the field of second language acquisition (SLA), with both proponents and critics offering various perspectives on its validity and implications. Supporters of CPH argue that there is a biological window during which the brain is optimally equipped to learn languages, particularly in early childhood. This argument is grounded in research suggesting that younger individuals, especially those exposed to a second language (L2) before puberty, tend to achieve higher proficiency in grammar, pronunciation, and overall fluency. For example, studies have shown that children who learn a second language early in life are more likely to achieve near-native pronunciation, while adults often struggle to reach the same level of fluency (Johnson & Newport, 1989). These findings point to a critical period in which the brain's neural plasticity allows for more effective language learning, reinforcing the idea that language acquisition is more successful when initiated at a young age.

However, critics of the Critical Period Hypothesis argue that the concept of a rigid, biologically determined critical period for language acquisition is overly simplistic and does not account for the complexities of second language learning. They assert that while age may influence the ease of acquiring certain aspects of a language, it is not the sole factor determining success. For instance, motivation, learning environment, and exposure to the target language can all play significant roles in the proficiency an individual achieves in an

L2. Studies have demonstrated that adults, despite their perceived disadvantage, can still achieve high levels of proficiency, especially in areas such as vocabulary acquisition and understanding complex grammatical structures (Bialystok, 1997). Critics argue that the CPH underestimates the role of cognitive and social factors, such as the individual's motivation and the context in which the language is learned, which can offset age-related challenges.

Moreover, some non-critics point out that the idea of a "critical period" is too rigid, and suggest that a sensitive period might be a more accurate concept. This alternative theory acknowledges that the brain's ability to acquire language may decline with age but does not completely close off language learning in adulthood. The term "sensitive period" implies that while the acquisition process may be more challenging for older learners, it is still possible to learn a second language effectively at any age, particularly with sufficient exposure and practice (DeKeyser, 2000). This perspective challenges the notion that a strict cutoff age exists for acquiring a second language, offering a more flexible understanding of language learning across the lifespan.

Another major critique of CPH comes from findings in bilingualism research, which suggests that people who acquire multiple languages during adulthood often achieve near-native fluency, particularly when they are immersed in the language environment. For example, research on bilinguals who have learned multiple languages in adulthood has shown that they can achieve fluency that is indistinguishable from that of native speakers in many cases. This suggests that other factors, such as frequency and quality of language input, may be as important, if not more so, than the age at which learning begins (Snow, 2010). Critics also emphasize that individual differences in cognitive abilities, such as working memory and cognitive flexibility, can play a larger role in language acquisition than age alone.

In conclusion, while the Critical Period Hypothesis has provided valuable insights into the potential relationship between age and second language acquisition, it is important to consider the broader range of factors that influence language learning. The concept of a critical period, particularly as it pertains to language acquisition, may not be as rigid as once thought, and the success of second language learners depends on a complex interplay of age, motivation, exposure, and cognitive factors. Critics of CPH stress the importance of considering individual differences and the social context of language learning, suggesting that a more nuanced view of the language acquisition process is necessary.

Factors That Influenced SLA

For language learners, age is an objective and unalterable characteristic. Other variables, including as motivation, cognitive capacity, and language learning, are modifiable. This section will go over the factors that influenced the learners can how critical Period Hypothesis (CPH) can help them.

a. Profiency in Language

The most fundamental and straightforward skill is learning a language, and the one that improves the most during the learning process is language coding. It works well to guarantee fresh language rhythm and accuracy (Pickering, 2012). To generate the /F/ sound, for instance, make a bunny face. Then, tap the hand rhythm to determine the previous paragraph. We can attain the effect of automatic planning and speech with consistent practice.

b. Cognitive capacity

Additionally, cognitive ability has improved. Enhancing fragments and upper fragments can significantly increase second language fluency, and implicit memory capacity is a key indicator of proficiency. There is an interaction between implicit memory and implicit learning (Granena & Long, 2013). Thus, this type of instruction can enhance language learners' cognitive abilities. Additionally, by contrasting the disparities between their mother tongue and the target language, second language learners can enhance their capacity for language reflection. Language proficiency is also influenced by cognition and self-cognition. In order to create training and learning that is specifically focused, the emphasis is on understanding the traits of each learning stage (Saito, 2015).

c. Effective communication

Effective classroom communication can boost the confidence of second language learners. Learners can decrease the errors they make when communicating with others by grasping the crucial phonetic period of the language (Pickering, 2012). Al Mortada asserts that self-confidence and motivation are related variables. Over time, learners' learning styles will change.

DISCUSSION

The relationship between age and second language acquisition (SLA) has long been a subject of interest in linguistics and psychology. One of the most influential theories in this area is the Critical Period Hypothesis (CPH), which posits that there is an optimal window during early childhood for acquiring a second language (L2). According to this hypothesis, language learning becomes significantly more difficult after puberty, due to changes in the brain's neurological plasticity. This theory suggests that individuals who are exposed to a second language at a young age are more likely to achieve native-like proficiency, particularly in areas like pronunciation and grammar. However, the idea of a critical period has sparked considerable debate, with many researchers providing both supporting and opposing evidence.

Supporters of CPH argue that young learners possess a greater capacity for language acquisition because their brains are more flexible during early childhood. Studies have shown that children who are exposed to a second language before puberty tend to exhibit better pronunciation, greater fluency, and more accurate grammar compared to those who begin learning a language in adulthood (Johnson & Newport, 1989). This supports the notion that there is a sensitive window during which the brain is particularly adept at acquiring linguistic structures. Furthermore, children who are immersed in a language environment tend to pick up languages more naturally, without the need for explicit instruction, which is often the case for adult learners.

On the other hand, critics of CPH argue that age is not the only factor determining second language proficiency. They contend that adults, while they may face challenges such as an accent or difficulty mastering grammatical structures, can still achieve high levels of proficiency, particularly if they are highly motivated and provided with the right learning conditions. Research on adult learners has shown that factors like motivation, exposure, the quality of language input, and social context play a significant role in the success of second language acquisition (Snow, 2010). For example, immersion in a language-speaking environment can lead to impressive language outcomes, even for older learners. Some studies have also indicated that adults are capable of mastering complex linguistic structures and acquiring substantial vocabulary despite the challenges posed by their age.

The Sensitive Period Hypothesis (SPH), an alternative to CPH, provides a more flexible understanding of age-related changes in language learning. While SPH agrees that younger learners may have certain advantages due to the brain's heightened plasticity, it suggests that

language acquisition is still possible at later stages in life. Unlike the Critical Period, which suggests a fixed cutoff point, the Sensitive Period allows for more gradual decline in learning ability over time. According to sensitive period hypothesis (SPH), adults may still benefit from language learning, though they might need to invest more effort and employ different strategies, such as explicit instruction and focused practice (DeKeyser, 2000).

Moreover, the role of individual differences cannot be overlooked in the discussion of age and second language acquisition. Factors like cognitive abilities, linguistic capability, and effective communication have all been explained to influence language learning results. Adults, for instance, can apply more sophisticated learning techniques and draw upon their cognitive maturity and life experiences, which may enable them to learn a second language in ways that differ from children. Research has demonstrated that while age can influence the ease of acquiring language, it does not necessarily determine the ultimate level of proficiency a learner can achieve.

CONCLUSION

In conclusion, while the Critical Period Hypothesis offers valuable insights into the role of age in second language acquisition, it remains a contentious theory. While there is evidence to suggest that younger learners have certain advantages in acquiring pronunciation and grammar, it is clear that factors beyond age such as motivation, exposure, and learning environment are critical to success in second language acquisition. The Sensitive Period Hypothesis provides a more nuanced perspective, emphasizing the gradual decline in language learning abilities over time rather than a sudden end to language learning after a certain age. Ultimately, second language acquisition is a complex process influenced by a variety of factors, with age being just one of many considerations.

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