



THE IMPACT OF BILINGUAL AND PLURILINGUAL INDIVIDUALS' BILINGUAL ABILITY ON MENTAL DEVELOPMENT

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Abstract: This article examines the impact of bilingual and plurilingual individuals' bilingualism on cognitive development. Studies have shown that bilingualism improves cognitive functions such as brain flexibility, memory, attention, creative thinking, and metalinguistic awareness. It also examines aspects such as decision-making ability, protection against dementia in old age, and social adaptability of bilingual individuals. This article examines how multilingualism positively impacts educational achievement, personal development, and job market advantage.

Keywords: cognitive development, neuroplasticity, metalinguistic awareness, code-switching, attention, memory, decision-making, dementia, creative thinking, empathy, brain activity.

In today's era of globalization, the need to know multiple languages is increasing. The use of different languages in society is seen not only as a means of communication, but also as a factor that directly affects the mental development of an individual. Studies conducted in the fields of psychology and pedagogy show that cognitive functions in the brains of bilingual and plurilingual individuals work differently than in monolingual individuals. This article will examine in detail how bilingualism in bilingual and plurilingual individuals affects mental development. A bilingual person is a person who speaks two languages fluently and uses both languages in their daily lives. A plurilingual person is defined as a person who can communicate in three or more languages and has knowledge of several languages. These individuals use two or more languages interchangeably in their daily activities, and this situation affects their mental processes, in particular, cognitive functions such as logical thinking, attention, and memory to a certain extent.

Bilingual and plurilingual individuals often code-switch in their brains when working with several languages. Code-switching, that is, quickly switching from one language to another, increases the flexibility of brain activity. This process teaches the brain to quickly adapt to different conditions and develops the ability of a person to perform many tasks simultaneously (multitasking) [1]. Since bilingual children can communicate in two languages, their ability to quickly shift their attention from one task or activity to another is developed. Studies show that bilingual children show greater flexibility in managing attention and completing tasks compared to their monolingual peers. This is especially important in the educational process. Bilingual individuals have the opportunity to see the world from different perspectives by knowing several languages. Since each language expresses its own unique worldview, a multifaceted approach is formed in the thinking of bilingual individuals. This increases their creative thinking skills and is useful in finding innovative solutions to problems.

For example, bilinguals find new and creative solutions to a problem by thinking about it in one language and then explaining or analyzing it in another. This allows them to see things from a broader perspective, drawing on different cultural and logical inferences. Bilinguals may also have better memory

functions. Knowing multiple languages requires the brain to remember different vocabulary and grammatical rules. This process develops both long-term and short-term memory. Studies show that bilinguals are more efficient at encoding, storing, and retrieving information. In addition, bilinguals may have a stronger cognitive reserve. This is important in slowing down the aging process of the brain and in the later onset of diseases such as dementia. Bilingualism keeps the brain constantly active, which creates a protective mechanism against the breakdown of neural connections [2].

When bilingual and plurilingual individuals communicate in two or more languages, they develop a deeper ability to analyze the structures of language. Metalinguistic awareness is the ability to understand and analyze language and its structure, and bilingual individuals have this awareness at a high level. For example, bilingual children can more quickly identify grammatical errors or defects in sentence structure. This ability increases their success in written and oral communication. Bilingual and plurilingual individuals feel at ease in different cultural environments [3]. This, in turn, strengthens their social adaptability and psychological stability. By knowing different languages, they succeed in intercultural communication and participate effectively in international relations. This plays an important role in their personal growth and finding their place in society.

The bilingual ability of bilingual and plurilingual individuals not only increases the effectiveness of communication, but also has a significant impact on their intellectual development. Their abilities such as flexible thinking, problem solving, creative thinking, memory and metalinguistic awareness are developed. Bilingualism is an important tool for raising a successful and adaptable person in today's globalized world. Therefore, supporting multilingualism in the education system and society is of great importance in increasing the personal and intellectual potential of a person. One of the important factors explaining the mental development of bilingual individuals is neuroplasticity in the brain (the ability of the brain to change its structure under the influence of new experiences and learned skills). Bilingual people, due to constant code switching between two languages, strengthen the activity of the control centers located in the frontal part of their brain [4]. This process, in turn, strengthens the connections between neurons in the cerebral cortex and creates new ones.

Various scientific studies have examined the brains of bilingual individuals using magnetic resonance imaging (MRI). The results of the studies show that bilingualism increases the amount of gray matter in the brain structure. Gray matter controls the basic information transmission and processing processes in the brain. Thus, bilingual individuals have increased neuroplasticity, which enhances mental development and learning. The decision-making ability of bilingual individuals is also improved in many ways. Knowing two or more languages requires the brain to simultaneously sort and separate different information from each other. This process develops the skills of quickly evaluating information that is important for decision-making, prioritizing it, and choosing the most optimal option among them. For example, bilingual children have been observed to make faster and more accurate decisions when solving logic puzzles and playing games. This ability helps them to be successful not only in the educational process, but also in solving problems in everyday life. One of the advantages of bilingualism is the preservation of a high level of brain activity even in old age [4].

According to studies, signs of dementia (mental decline in old age) in bilingual individuals appear on average 4-5 years later than in monolingual individuals. This is due to the constant language switching and language control processes in the brain. The brain of bilingual individuals is able to form new neural connections even during the aging process. This process plays an important role in combating the early development of dementia and Alzheimer's disease. This protective feature of bilingualism is associated with the concept of cognitive reserve, which is explained by the intellectual experience gained by a person throughout his life and the ability of the brain to maintain itself. By learning the languages of different cultures, bilingual and plurilingual individuals also get acquainted with the values, customs and worldview of these cultures. This process develops their ability to empathize with other people. By understanding different cultures and languages, bilingual individuals grow up to be more open-minded and tolerant [5]. The development of emotional intelligence helps them succeed in social relationships in society. Bilingual individuals usually feel at ease in different cultural environments, which helps them succeed in teamwork, as well as develop leadership skills.

The educational achievements of bilingual individuals are also noteworthy. Studies show that

bilingual children have higher scores in reading, writing, and science. By learning two languages, children develop logical thinking, vocabulary, grammar, and comprehension skills better. This process helps them succeed not only in their native language, but also in other subjects and fields. For example, when solving mathematical problems or mastering scientific concepts, bilingual children can explain the same concept in different ways through different languages. This multifaceted approach helps them understand concepts more deeply and clearly [5]. In the era of globalization, bilingual and plurilingual individuals have a great advantage in the labor market. International companies and organizations need employees who know many languages. Bilingual employees can be more effective in international communication and negotiations. Their ability to speak several languages creates more opportunities for them in professional fields.

In addition, bilingual individuals have the opportunity to work or study in foreign countries. This improves their quality of life and expands their opportunities for personal development. The bilingual ability of bilingual and plurilingual individuals is not limited to language proficiency, but also affects various aspects of mental development. Many cognitive functions in the brain, such as neuroplasticity, memory, creative thinking, attention, and metalinguistic awareness, are highly developed in bilingual individuals. In addition, bilingualism helps to achieve social adaptability, empathy, and success in global relations in society. Therefore, encouraging and supporting multilingualism can greatly contribute to the intellectual and cultural development of society.

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