

# **BILINGUALISM AND THE COGNITIVE DEVELOPMENT IN SECOND LANGUAGE SPEAKERS**

## *EL BILINGÜISMO Y EL DESARROLLO COGNITIVO EN HABLANTES DE SEGUNDA LENGUA*

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### **ABSTRACT**

The world has made great changes in the last century regarding communication; most societies have adopted different languages to carry out their education, business, technologies, and social life. Among the most important languages around the world, it is the English language that is considered as a lingua franca, and most people want to master it for being competitive in different fields. Besides, these well-known aspects there are lots of research which claims for a more critical role of bilingualism and its effect on effect on cognition and skills which are related with being creative, independent, innovative, and to be able to make decisions, take risks, among others which are the new abilities for the XXI century. Hence, this research intends to present a comparative analysis based on bibliographical and documental research on updated theories that are in favor and opposite with the effect of bilingualism in cognition.

**Keywords:** bilingualism, cognitive development, L2 learning

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## **RESUMEN**

El mundo ha realizado grandes cambios en el siglo pasado con respecto a la comunicación; La mayoría de las sociedades han adoptado diferentes idiomas para llevar a cabo su educación, negocios, tecnologías y vida social. Entre los idiomas más importantes en todo el mundo, se encuentra el Inglés siendo considerado una lengua franca, y la mayoría de las personas quiere dominarlo por ser competitivo en diferentes campos. Además, en estos aspectos bien conocidos, hay muchas investigaciones que afirman un papel más crítico del bilingüismo y su efecto sobre la cognición y las habilidades relacionadas con ser creativo, independiente, innovador y poder tomar decisiones y riesgos, entre otros, es decir las nuevas habilidades para el siglo XXI. Por lo tanto, esta investigación pretende presentar un análisis comparativo basado en investigaciones bibliográficas y documentales sobre teorías que están a favor y en contra del efecto del bilingüismo en la cognición.

**Palabras clave:** Bilingüismo, desarrollo cognitivo, aprendizaje de un segundo idioma

## **INTRODUCTION**

Nowadays, being able to speak two or more languages has provided important advantages in different fields such as: education, jobs, health and even for personal relationships. Seeing that, English language proficiency has taken more importance than decades ago. Therefore, bilingualism or the ability to speak and write proficiently in two languages represents an important characteristic that belongs to successful people.

Many researchers have demonstrated that apart from the benefits mentioned before, bilingualism strengthens complex mental process in speakers` brains (Peal & Lambert, as cited in Takakuwa, 2000). However, in spite of the multiple researches that support the benefits of bilingualism for the cognitive development, there are other studies which claim for its negative influence or none influence in the developing of cognition.

For instance, researches made by authors such as Saunders, Romaine, Carrol, and Darcy (as cited in Al-Amri, 2013) concluded that bilingualism led children to inadequate conceptions of a reality, they also considered that the learning process of a second language could produce confusion along the learners, which made them understand or produce erroneous messages, and also limit the learner`s ability for reasoning and analysis.

On the other hand, Peal and Lambert (as cited in Takakuwa, 2000) demonstrated that bilingualism has positive effects in cognitive process. They studied a group of ten years old students, which was divided in two subgroups: bilingual and monolingual, both groups were required to perform 18 tests to measure their intelligence.

As a result, the bilingual children achieved 83% of the total of tests better than the monolingual. Moreover, Scott, Kessler and Quinn, and Carringer ( as cited in Al-Amri, 2013) stated that bilingualism promotes both intelligence and creativity, throughout their studies they proved that bilingual children were better in activities that demanded high level of imagination and cognitive flexibility.

### **METHODOLOGY AND RESEARCH QUESTION**

Considering both contradictories views in favor and against the bilingualism, the research question is: Does Bilingualism Benefit the Cognitive Development in Second Language Speakers?

Answering this questions of whether bilingualism has positive effects on the cognitive development in second language speakers is still a topic that required further and specialized research. This research follows a bibliographical schema, where the information is analyzed and contrasted to gain a general view of the situation.

Nevertheless, the acquisition of a foreign language offers multiples benefits seems in the form of better communication and the developing of some stages of cognition related to the ability to select, memorization, and other skills that can be also transferable to other academic, professional and social areas.

### **DISCUSSION**

The conceptualization of cognition and the criteria to measure intelligence have produced different results and interpretation in studies about bilingualism and cognition. Different researches have interpreted the variables such as intelligence, cognition and bilingualism from different perspectives. According to Hulstijn (2012), the term bilingual and the criteria to be considered a person bilingual differed along the different studies.

Moreover, Bialystok (2001) argued that exists three different focuses to explain the meaning and measurement of the term intelligence, for example: the psychometric approach that consider the IQ testing as a form to determine the level of intelligence of a person, the componential approach that intended to measure intelligence considering a wide range of aspects such as the processing, context, guessing, adaptation, and the multiple intelligences concept that describe the variety of intelligences that all people possess. Therefore, the variety of definitions of intelligence from the three conceptions led to different positions about the effect of bilingualism in cognition development (Baker & Romaine as cited in Takakuwa, 2000, Bialystok, 2001).

Cognition and its developing can be observed through different mental processes that are done in a repetitive process. Flavell , Miller and Miller ( as cited in Takakuwa, 2000) stated

that it is complicated to establish a well detailed definition of cognition; however, they attempted to find a general definition of this term. Therefore, they defined cognition as a mental process, that is compound by a group of characteristics, such as: knowledge, consciousness, intelligence, thinking, imagining, creating, generating plans and strategies, reasoning, inferring, problem solving, conceptualizing, classifying and relating, symbolizing and fantasizing and dreaming. Referring to the term cognitive development, it was primary introduced by Piaget; he intended to demonstrate that human beings were able to take from their environment the knowledge, to unify it with their previous schemata and to generate new knowledge. The process followed steps of assimilation, accommodation, and feedback to increase the schemata in a circle of infinite process of learning (Huitt & Hummel, 2003).

Consequently, the definition established by Flavel et al. and Piaget promoted and reinforced the relationship between bilingualism and cognitive development, because with the first one children are able to classify, memorize and create messages in a new language and this process can easily be bolstered by a process of assimilation of semantic, syntax, and communicational functions of the second language, then it is interiorized through the usage of those symbolism and sounds in different contexts.

In spite of there are many research which refer to the negative effect in cognitive development as a result of bilingualism (Saunders, McLaughlin as cited in Al-Amri, 2013), recent studies have demonstrated that bilingualism has important influence in the developing of certain areas of cognition such as: inhibitory control and selective attention, problem solving and creative thinking, working memory and metalinguistic awareness (Lauchlan, Parisi & Fadda, 2012).

Bilingualism has positive effect in the inhibitory control and selective attention of L2 speakers. According to Bialystok (2001), bilingual children have developed the ability to use their perception to determine and select the appropriate option from a variety of distractions. She argued that bilinguals are able to analyze by using the context and their perception of the meaning to determine which word or object is better adapted to the context. They also use their selective ability to focus on the most important and relevant information or characteristic of the object or text throughout their selective capability acquired from their high level of perception.

A research developed by Bialystok (2001), demonstrated that both bilingual and monolinguals scored equally when they applied their arithmetic knowledge in a simple exercise, in that case to evaluate the proportion of candies in two bowls. However, when the test required deeper analysis and included more complex situation such as distractions - the double legos-

only the bilingual children could identify them and were able to focus on the activity and determine the correct numbers of pieces of legos with similar characteristics. The process of inhibition plays an important role in the mental process of learners and second language speakers, because it allows them to perform cognitive tasks (Dagenbach, Dempster, Diamond & Taylor as cited in Lauchlan et al., 2012), even in areas with similar characteristic to language learning such as music and mathematics.

Referring to the benefits of bilingualism in the development of selecting process and inhibitory control and the transferability of those skills to other areas, represent an important advantage of bilingualism for many of the component of the cognition ( Flavell & et al., as cited in Takakuwa, 2000). Moreover, language and numbers are taught similarly and in some cases simultaneously since the kinder garden, they also have similar conventionalism to follow such as rules established before to create meaning in the union of symbols. Consequently, the selecting and inhibition skills and the mobility of them from language to numbers and vice versa facilitate the correlation between the benefits of an increasing in one of them in the development of the other one.

Bilingual children tend to be more creative than monolingual children. Therefore, they are better in problem solving. Lauchlan et al., (2012) stated that the concept of mental and symbolic flexibility are the principal domains that bilingual are able to performed better than monolingual, for that reason, they are more creative in the construction of objects, phrases, and to find creative answer to solve difficulties. Moreover, their mental flexibility allow bilinguals to break the standards enclosed in their mother tongue and find out other options, that make them think fast and consider different aspect in their context in order to select the best option according to their ideas, perception and I1 and I2 schemata.

According to Scott ( as cited in Al-Amri, 2013), bilingual children are better than monolingual children in activities that required their imagination and creativity to solve some thinking tasks. Carringer (as cited in Al-Amri, 2013) concluded that “bilingualism promoted the creative ability in all aspects such as verbal and figural fluency, flexibility and originality” (Al-Amri, 2013, p.4). However, Kharkhurin (as cited in Lauchlan et al., 2012) found that bilinguals performed better with non -verbal activities, which basically refers to creativity, while monolinguals are better with verbal activities. Therefore, the advantages of bilingualism in cognitive performance are basically determined by a task focused on measure non verbal-skills.

Bilingualism tends to facilitate the process of memorization and storage of words in the short term and long term memory. There are different contradictory arguments about the influence

of bilingualism in the working memory. However, Da Costa Pinto (Lauchlan et al., 2012) considered that there is a familiar effect that transforms the symbols and make them easier to storage in the long term memory, especially when the word possesses similar structure to the mother tongue. Due to students have grown with this L1 language, they have more knowledge of syntactic and semantic form, that can help to learn a second language easily, especially when their structures are similar. In addition, Bialystok, Craik, Grady, Chau, Ishii, Gunji and Pantev (2004) argued that bilingual children develop their working memory much better than monolingual.

According to a research performed by Kormi-Nouri, Moniri and Nilsson ( as cited in Lauchlan et al., 2012), bilingualism provided positive effects in semantic memory, because bilingual children have developed their ability to assimilate and accommodate new information in their memory, through a process of organization and reinforcement done for the mother tongue and foreign language.

Metalinguistic awareness facilitates the acquisition of foreigner languages, for that reason it is considered as the main benefits of bilingualism. Lauchlan et al., ( 2012 ) stated that metalinguistic is the ability to reflect about the language, it is seem when children are able to identify, reasoning about the use of syntax and semantic structure and modify what they have written or spoken throughout the analysis and reflection about the language. The metalinguistic uses a pre-established language or mother tongue as a pattern to learn a new one, it is especially true and easy when they have similar structures that facilitate the transferability between both languages. Jessner (as cited in Lauchlan et al., 2012 ) argued that bilingualism affects positively to metalinguistic awareness, because children become more sensitive and flexible during the time to select and create the messages using 11 or 12 languages.

This phenomenon is connected with the inhibition process that make bilinguals analyze and select the best word, or phrase to describe a situation. Even though, bilingualism is considered as a promoting of cognitive development, there are some researchers such as Cummis (cited in Takakuwa, 2000) manifested that there is confusion with bilingualism and its primary benefits in cognition development. He manifested that it is ambiguous to consider that bilingualism has a direct and positive influence in cognitive development. Contradictory, he made a restatement of the classical point of view, considering that the main positive effect of bilingualism is observed in metalinguistic domain of a language.

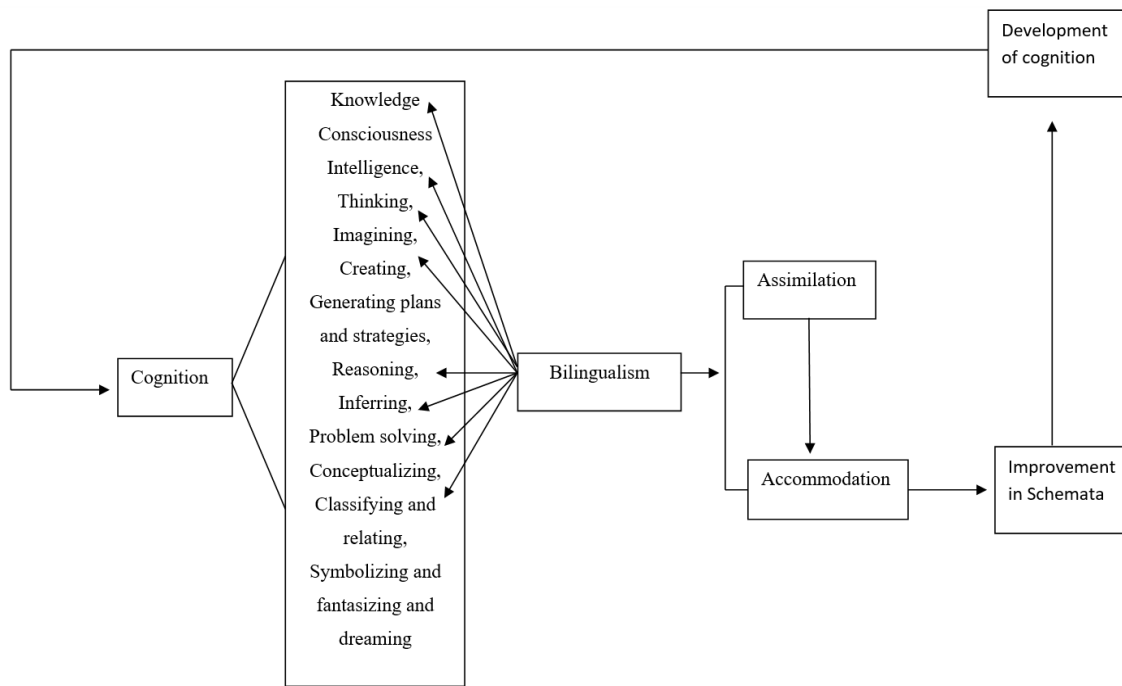


Figure 1. The influence of bilingualism in the cognitive development of human beings

Authors

**Conclusion**

In conclusion, in spite of bilingualisms can not affect all the stages form the cognition, it is clearly demonstrated that it produces positive effect in some stages of the cognition such as imagining, knowledge , reasoning, classifying, inferring and problem solving. The figure 1. presentes the influence of bilingualism in the cognitive development of human beings. This fact has been widely demonstrated through the results of studies that showed that Bilingual children scored better in test that demands their ability to use creativity, to infer, to classify and reasoning to determine the more remarkable aspects of a situation and select the most appropriate solution (Bialystok, 2001).

Moreover, it has been proved that bilingualism promote the developing of metalinguistic knowledge and the increasing in the long term memory, which benefits the acquisition of new languages and the storage of new information in the long term memory, through a process of assimilation and accommodation that facilitate the feedback and increased of schemata, facilitating the mental process of analysis and infer new information through a

pieces of contrasting and analysis and accepting the new information and transforming it into a new group of knowledge kept in the long term memory.

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